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This section of the FEDERAL REGISTER contains regulatory documents having general applicability and legal effect, most of which are keyed to and codified in the Code of Federal Regulations, which is published under 50 titles pursuant to 44 U.S.C. 1510.

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## FEDERAL RESERVE SYSTEM

### 12 CFR Part 263

[Docket No. R-1799]

RIN 7100-AG 52

### Rules of Practice for Hearings

**AGENCY:** Board of Governors of the Federal Reserve System.

**ACTION:** Final rule.

**SUMMARY:** The Board of Governors of the Federal Reserve System (the “Board”) is issuing a final rule amending its rules of practice and procedure to adjust the amount of each civil money penalty (“CMP”) provided by law within its jurisdiction to account for inflation as required by the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015.

**DATES:** This final rule is effective on January 11, 2023.

**FOR FURTHER INFORMATION CONTACT:** Thomas O. Kelly, Senior Counsel (202/974-7059), Legal Division, Board of Governors of the Federal Reserve System, 20th Street and Constitution Ave. NW, Washington, DC 20551. For users of Telecommunication Device for the Deaf (TDD) only, contact 202/263-4869.

#### SUPPLEMENTARY INFORMATION:

#### Federal Civil Penalties Inflation Adjustment Act

The Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. 2461 note (“FCPIA Act”), requires Federal agencies to adjust, by regulation, the CMPs within their jurisdiction to account for inflation. The Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (the “2015 Act”) <sup>1</sup> amended the FCPIA Act to require Federal agencies to make annual adjustments not later than January 15 of every year.<sup>2</sup> The Board is now issuing a

new final rule to set the CMP levels pursuant to the required annual adjustment for 2023. The Board will apply these adjusted maximum penalty levels to any penalties assessed on or after January 11, 2023, whose associated violations occurred on or after November 2, 2015. Penalties assessed for violations occurring prior to November 2, 2015, will be subject to the amounts set in the Board’s 2012 adjustment pursuant to the FCPIA Act.<sup>3</sup>

Under the 2015 Act, the annual adjustment to be made for 2023 is the percentage by which the Consumer Price Index for the month of October 2022 exceeds the Consumer Price Index for the month of October 2021. On December 15, 2022, as directed by the 2015 Act, the Office of Management and Budget (OMB) issued guidance to affected agencies on implementing the required annual adjustment which included the relevant inflation multiplier.<sup>4</sup> Using OMB’s multiplier, the Board calculated the adjusted penalties for its CMPs, rounding the penalties to the nearest dollar.<sup>5</sup>

#### Administrative Procedure Act

The 2015 Act states that agencies shall make the annual adjustment “notwithstanding section 553 of title 5, United States Code.” Therefore, this rule is not subject to the provisions of the Administrative Procedure Act (the “APA”), 5 U.S.C. 553, requiring notice, public participation, and deferred effective date.

#### Regulatory Flexibility Act

The Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.*, requires a regulatory flexibility analysis only for rules for which an agency is required to publish a general notice of proposed rulemaking. Because the 2015 Act states that agencies’ annual adjustments are to be made notwithstanding section 553 of title 5 of United States Code—the APA

<sup>3</sup> 77 FR 68680 (Nov. 16, 2012).

<sup>4</sup> OMB Memorandum M-23-05, *Implementation of Penalty Inflation Adjustments for 2023, Pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015* (Dec. 15, 2022).

<sup>5</sup> Under the 2015 Act and implementing OMB guidance, agencies are not required to make an adjustment to a CMP if, during the 12 months preceding the required adjustment, such penalty increased due to a law other than the 2015 Act by an amount greater than the amount of the required adjustment. No other laws have adjusted the CMPs within the Board’s jurisdiction during the preceding 12 months.

section requiring notice of proposed rulemaking—the Board is not publishing a notice of proposed rulemaking. Therefore, the Regulatory Flexibility Act does not apply.

#### Paperwork Reduction Act

There is no collection of information required by this final rule that would be subject to the Paperwork Reduction Act of 1995, 44 U.S.C. 3501 *et seq.*

#### List of Subjects in 12 CFR Part 263

Administrative practice and procedure, Claims, Crime, Equal access to justice, Lawyers, Penalties.

#### Authority and Issuance

For the reasons set forth in the preamble, the Board amends 12 CFR part 263 to read as follows:

### PART 263—RULES OF PRACTICE FOR HEARINGS

■ 1. The authority citation for part 263 continues to read as follows:

**Authority:** 5 U.S.C. 504, 554–557; 12 U.S.C. 248, 324, 334, 347a, 504, 505, 1464, 1467, 1467a, 1817(j), 1818, 1820(k), 1829, 1831o, 1831p–1, 1832(c), 1847(b), 1847(d), 1884, 1972(2)(F), 3105, 3108, 3110, 3349, 3907, 3909(d), 4717; 15 U.S.C. 21, 781(i), 78o–4, 78o–5, 78u–2; 1639e(k); 28 U.S.C. 2461 note; 31 U.S.C. 5321; and 42 U.S.C. 4012a.

■ 2. Section 263.65 is revised to read as follows:

#### § 263.65 Civil money penalty inflation adjustments.

(a) *Inflation adjustments.* In accordance with the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015, which further amended the Federal Civil Penalties Inflation Adjustment Act of 1990, the Board has set forth in paragraph (b) of this section the adjusted maximum amounts for each civil money penalty provided by law within the Board’s jurisdiction. The authorizing statutes contain the complete provisions under which the Board may seek a civil money penalty. The adjusted civil money penalties apply only to penalties assessed on or after January 11, 2023, whose associated violations occurred on or after November 2, 2015.

(b) *Maximum civil money penalties.* The maximum (or, in the cases of 12 U.S.C. 334 and 1832(c), fixed) civil

<sup>1</sup> Public Law 114–74, 129 Stat. 599 (2015) (codified at 28 U.S.C. 2461 note).

<sup>2</sup> 28 U.S.C. 2461 note, sec. 4(b)(1).



money penalties as set forth in the referenced statutory sections are set forth in the table in this paragraph (b).

TABLE 1 TO PARAGRAPH (b)

Statute		Adjusted civil money penalty
12 U.S.C. 324 .....	<i>Inadvertently late or misleading reports, inter alia</i> .....	\$4,745
	<i>Other late or misleading reports, inter alia</i> .....	47,454
	<i>Knowingly or reckless false or misleading reports, inter alia</i> .....	2,372,677
12 U.S.C. 334 .....	.....	345
12 U.S.C. 374a .....	.....	345
12 U.S.C. 504 .....	.....	.....
	<i>First Tier</i> .....	11,864
	<i>Second Tier</i> .....	59,316
	<i>Third Tier</i> .....	2,372,677
12 U.S.C. 505 .....	.....	.....
	<i>First Tier</i> .....	11,864
	<i>Second Tier</i> .....	59,316
	<i>Third Tier</i> .....	2,372,677
12 U.S.C. 1464(v)(4) .....	.....	4,745
12 U.S.C. 1464(v)(5) .....	.....	47,454
12 U.S.C. 1464(v)(6) .....	.....	2,372,677
12 U.S.C. 1467a(i)(2) .....	.....	59,316
12 U.S.C. 1467a(i)(3) .....	.....	59,316
12 U.S.C. 1467a(r) .....	.....	.....
	<i>First Tier</i> .....	4,745
	<i>Second Tier</i> .....	47,454
	<i>Third Tier</i> .....	2,372,677
12 U.S.C. 1817(j)(16) .....	.....	.....
	<i>First Tier</i> .....	11,864
	<i>Second Tier</i> .....	59,316
	<i>Third Tier</i> .....	2,372,677
12 U.S.C. 1818(i)(2) .....	.....	.....
	<i>First Tier</i> .....	11,864
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12 U.S.C. 1820(k)(6)(A)(ii) .....	.....	390,271
12 U.S.C. 1832(c) .....	.....	3,446
12 U.S.C. 1847(b) .....	.....	59,316
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12 U.S.C. 3110(a) .....	.....	54,224
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	<i>First Tier</i> .....	4,339
	<i>Second Tier</i> .....	43,377
	<i>Third Tier</i> .....	2,168,915
12 U.S.C. 3909(d) .....	.....	2,951
15 U.S.C. 78u-2(b)(1) .....	.....	.....
	<i>For a natural person</i> .....	11,162
	<i>For any other person</i> .....	111,614
15 U.S.C. 78u-2(b)(2) .....	.....	.....
	<i>For a natural person</i> .....	111,614
	<i>For any other person</i> .....	558,071
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	<i>For any other person</i> .....	1,116,140
15 U.S.C. 1639e(k)(1) .....	.....	13,627
15 U.S.C. 1639e(k)(2) .....	.....	27,252
42 U.S.C. 4012a(f)(5) .....	.....	2,577

By order of the Board of Governors of the Federal Reserve System, acting through the Secretary of the Board under delegated authority.

**Michele Taylor Fennell,**

*Deputy Associate Secretary of the Board.*

[FR Doc. 2023-00327 Filed 1-10-23; 8:45 am]

**BILLING CODE 6210-01-P**

**FEDERAL TRADE COMMISSION**

**16 CFR Part 1**

**Adjustments to Civil Penalty Amounts**

**AGENCY:** Federal Trade Commission.

**ACTION:** Final rule.

**SUMMARY:** The Federal Trade Commission (“FTC” or “Commission”) is implementing adjustments to the civil penalty amounts within its jurisdiction to account for inflation, as required by law.

**DATES:** Effective January 11, 2023.

**FOR FURTHER INFORMATION CONTACT:** Marie Choi, Attorney (202-326-3368), Office of the General Counsel, Federal Trade Commission, 600 Pennsylvania Avenue NW, Washington, DC 20580.

**SUPPLEMENTARY INFORMATION:** The Federal Civil Penalties Inflation Adjustment Act Improvements Act (“FCPIAA”) of 2015<sup>1</sup> directs agencies to adjust the civil penalty maximums under their jurisdiction for inflation every January. Accordingly, the Commission issues annual adjustments to the maximum civil penalty amounts under its jurisdiction.<sup>2</sup>

Commission Rule § 1.98 sets forth the applicable civil penalty amounts for violations of certain laws enforced by the Commission.<sup>3</sup> As directed by the FCPIAA, the Commission is issuing adjustments to increase these maximum civil penalty amounts to address inflation since its prior 2022 adjustment. The following adjusted amounts will take effect on January 11, 2023:

- Section 7A(g)(1) of the Clayton Act, 15 U.S.C. 18a(g)(1) (premerger filing notification violations under the Hart-Scott-Rodino Improvements Act)—Increase from \$46,517 to \$50,120;
- Section 11(l) of the Clayton Act, 15 U.S.C. 21(l) (violations of cease and desist orders issued under Clayton Act section 11(b))—Increase from \$24,714 to \$26,628;
- Section 5(l) of the FTC Act, 15 U.S.C. 45(l) (unfair or deceptive acts or practices)—Increase from \$46,517 to \$50,120;
- Section 5(m)(1)(A) of the FTC Act, 15 U.S.C. 45(m)(1)(A) (unfair or deceptive acts or practices)—Increase from \$46,517 to \$50,120;
- Section 5(m)(1)(B) of the FTC Act, 15 U.S.C. 45(m)(1)(B) (unfair or deceptive acts or practices)—Increase from \$46,517 to \$50,120;
- Section 10 of the FTC Act, 15 U.S.C. 50 (failure to file required reports)—Increase from \$612 to \$659;
- Section 5 of the Webb-Pomerene (Export Trade) Act, 15 U.S.C. 65 (failure by associations engaged solely in export trade to file required statements)—Increase from \$612 to \$659;
- Section 6(b) of the Wool Products Labeling Act, 15 U.S.C. 68d(b) (failure by wool manufacturers to maintain required records)—Increase from \$612 to \$659;
- Section 3(e) of the Fur Products Labeling Act, 15 U.S.C. 69a(e) (failure to maintain required records regarding fur products)—Increase from \$612 to \$659;
- Section 8(d)(2) of the Fur Products Labeling Act, 15 U.S.C. 69f(d)(2) (failure to maintain required records regarding fur products)—Increase from \$612 to \$659;
- Section 333(a) of the Energy Policy and Conservation Act (EPCA), 42 U.S.C. 6303(a) (knowing violations of EPCA section 332, including labeling violations)—Increase from \$503 to \$542;
- Section 525(a) of the Energy Policy and Conservation Act, 42 U.S.C. 6395(a) (recycled oil labeling violations)—Increase from \$24,714 to \$26,628;
- Section 525(b) of the Energy Policy and Conservation Act, 42 U.S.C. 6395(b) (willful violations of recycled oil labeling requirements)—Increase from \$46,517 to \$50,120;
- Section 621(a)(2) of the Fair Credit Reporting Act, 15 U.S.C. 1681s(a)(2) (knowing violations of the Fair Credit Reporting Act)—Increase from \$4,367 to \$4,705;
- Section 1115(a) of the Medicare Prescription Drug Improvement and Modernization Act of 2003, Public Law 108-173, as amended by Public Law 115-263, 21 U.S.C. 355 note (failure to comply with filing requirements)—Increase from \$16,445 to \$17,719; and
- Section 814(a) of the Energy Independence and Security Act of 2007, 42 U.S.C. 17304 (violations of prohibitions on market manipulation and provision of false information to Federal agencies)—Increase from \$1,323,791 to \$1,426,319.

**Calculation of Inflation Adjustments**

The FCPIAA, as amended, directs Federal agencies to adjust each civil monetary penalty under their jurisdiction for inflation in January of each year pursuant to a cost-of-living adjustment.<sup>4</sup> The cost-of-living adjustment is based on the percent change between the U.S. Department of Labor’s Consumer Price Index for all-urban consumers (“CPI-U”) for the month of October preceding the date of the adjustment, and the CPI-U for October of the prior year.<sup>5</sup> Based on that formula, the cost-of-living adjustment multiplier for 2023 is 1.07745. The FCPIAA also directs that these penalty level adjustments should be rounded to the nearest dollar. Agencies do not have discretion over whether to adjust a maximum civil penalty, or the method used to determine the adjustment.

The following chart illustrates the application of these adjustments to the civil monetary penalties under the Commission’s jurisdiction.

**CALCULATION OF ADJUSTMENTS TO MAXIMUM CIVIL MONETARY PENALTIES**

Citation	Description	2022 Penalty level	Adjustment multiplier	2023 Penalty level rounded to the nearest dollar)
16 CFR 1.98(a): 15 U.S.C. 18a(g)(1) .....	Premerger filing notification violations .....	\$46,517	1.07745	\$50,120
16 CFR 1.98(b): 15 U.S.C. 21(l) .....	Violations of cease and desist orders .....	24,714	1.07745	26,628

<sup>1</sup> Public Law 114-74, 701, 129 Stat. 599 (2015). The Act amends the Federal Civil Penalties Inflation Adjustment Act, Public Law 101-410, 104 Stat. 890 (codified at 28 U.S.C. 2461 note).

<sup>2</sup> 81 FR 42476 (2016); 82 FR 8135 (2017); 83 FR 2902 (2018); 84 FR 3980 (2019); 85 FR 2014 (2020); 86 FR 2539 (2021); 87 FR 1070 (2022).

<sup>3</sup> 16 CFR 1.98.

<sup>4</sup> 28 U.S.C. 2461 note (4).

<sup>5</sup> *Id.* (3), (5)(b); Office of Management and Budget, Memorandum M-23-05, *Implementation of Penalty Inflation Adjustments for 2023, Pursuant to the Federal Civil Penalties Inflation Adjustment Act*

*Improvements Act of 2015* (December 15, 2022), available at: <https://www.whitehouse.gov/wp-content/uploads/2022/12/M-23-05-CMP-CMP-Guidance.pdf>.

CALCULATION OF ADJUSTMENTS TO MAXIMUM CIVIL MONETARY PENALTIES—Continued

Citation	Description	2022 Penalty level	Adjustment multiplier	2023 Penalty level rounded to the nearest dollar)
16 CFR 1.98(c): 15 U.S.C. 45(j) .....	Unfair or deceptive acts or practices .....	46,517	1.07745	50,120
16 CFR 1.98(d): 15 U.S.C. 45(m)(1)(A) .....	Unfair or deceptive acts or practices .....	46,517	1.07745	50,120
16 CFR 1.98(e): 15 U.S.C. 45(m)(1)(B) .....	Unfair or deceptive acts or practices .....	46,517	1.07745	50,120
16 CFR 1.98(f): 15 U.S.C. 50 .....	Failure to file required reports .....	612	1.07745	659
16 CFR 1.98(g): 15 U.S.C. 65 .....	Failure to file required statements .....	612	1.07745	659
16 CFR 1.98(h): 15 U.S.C. 68d(b) .....	Failure to maintain required records .....	612	1.07745	659
16 CFR 1.98(i): 15 U.S.C. 69a(e) .....	Failure to maintain required records .....	612	1.07745	659
16 CFR 1.98(j): 15 U.S.C. 69f(d)(2) .....	Failure to maintain required records .....	612	1.07745	659
16 CFR 1.98(k): 42 U.S.C. 6303(a) .....	Knowing violations .....	503	1.07745	542
16 CFR 1.98(l): 42 U.S.C. 6395(a) .....	Recycled oil labeling violations .....	24,714	1.07745	26,628
16 CFR 1.98(l): 42 U.S.C. 6395(b) .....	Willful violations .....	46,517	1.07745	50,120
16 CFR 1.98(m): 15 U.S.C. 1681s(a)(2) .....	Knowing violations .....	4,367	1.07745	4,705
16 CFR 1.98(n): 21 U.S.C. 355 note .....	Non-compliance with filing requirements .....	16,445	1.07745	17,719
16 CFR 1.98(o): 42 U.S.C. 17304 .....	Market manipulation or provision of false information to Federal agencies.	1,323,791	1.07745	1,426,319

**Effective Dates of New Penalties**

These new penalty levels apply to civil penalties assessed after the effective date of the applicable adjustment, including civil penalties whose associated violation predated the effective date.<sup>6</sup> These adjustments do not retroactively change previously assessed or enforced civil penalties that the FTC is actively collecting or has collected.

**Procedural Requirements**

The FCPIAA, as amended, directs agencies to adjust civil monetary penalties through rulemaking and to publish the required inflation adjustments in the **Federal Register**, notwithstanding section 553 of title 5, United States Code. Pursuant to this congressional mandate, prior public notice and comment under the Administrative Procedure Act (“APA”) and a delayed effective date are not required. For this reason, the requirements of the Regulatory Flexibility Act (“RFA”) also do not apply.<sup>7</sup> Further, this rule does not contain any collection of information requirements as defined by the Paperwork Reduction Act of 1995 as amended. 44 U.S.C. 3501 *et seq.*

Pursuant to the Congressional Review Act (5 U.S.C. 801 *et seq.*), the Office of Information and Regulatory Affairs designated this rule as not a “major rule,” as defined by 5 U.S.C. 804(2).

**List of Subjects for 16 CFR Part 1**

Administrative practice and procedure, Penalties, Trade practices.

<sup>6</sup> 28 U.S.C. 2461 note (6).

<sup>7</sup> A regulatory flexibility analysis under the RFA is required only when an agency must publish a notice of proposed rulemaking for comment. *See* 5 U.S.C. 603.

**Text of Amendments**

For the reasons set forth in the preamble, the Federal Trade Commission amends title 16, chapter I, subchapter A, of the Code of Federal Regulations, as follows:

**PART 1—GENERAL PROCEDURES**

**Subpart L—Civil Penalty Adjustments Under the Federal Civil Penalties Inflation Adjustment Act of 1990, as Amended**

■ 1. The authority citation for part 1, subpart L, continues to read as follows:

**Authority:** 28 U.S.C. 2461 note.

■ 2. Revise § 1.98 to read as follows:

**§ 1.98 Adjustment of civil monetary penalty amounts.**

This section makes inflation adjustments in the dollar amounts of civil monetary penalties provided by law within the Commission’s jurisdiction. The following maximum civil penalty amounts apply only to penalties assessed after January 11, 2023, including those penalties whose associated violation predated January 11, 2023.

- (a) Section 7A(g)(1) of the Clayton Act, 15 U.S.C. 18a(g)(1)—\$50,120;
- (b) Section 11(l) of the Clayton Act, 15 U.S.C. 21(l)—\$26,628;
- (c) Section 5(l) of the FTC Act, 15 U.S.C. 45(l)—\$50,120;
- (d) Section 5(m)(1)(A) of the FTC Act, 15 U.S.C. 45(m)(1)(A)—\$50,120;
- (e) Section 5(m)(1)(B) of the FTC Act, 15 U.S.C. 45(m)(1)(B)—\$50,120;
- (f) Section 10 of the FTC Act, 15 U.S.C. 50—\$659;
- (g) Section 5 of the Webb-Pomerene (Export Trade) Act, 15 U.S.C. 65—\$659;
- (h) Section 6(b) of the Wool Products Labeling Act, 15 U.S.C. 68d(b)—\$659;

(i) Section 3(e) of the Fur Products Labeling Act, 15 U.S.C. 69a(e)—\$659;

(j) Section 8(d)(2) of the Fur Products Labeling Act, 15 U.S.C. 69f(d)(2)—\$659;

(k) Section 333(a) of the Energy Policy and Conservation Act, 42 U.S.C. 6303(a)—\$542;

(l) Sections 525(a) and (b) of the Energy Policy and Conservation Act, 42 U.S.C. 6395(a) and (b), respectively—\$26,628 and \$50,120, respectively;

(m) Section 621(a)(2) of the Fair Credit Reporting Act, 15 U.S.C. 1681s(a)(2)—\$4,705;

(n) Section 1115(a) of the Medicare Prescription Drug Improvement and Modernization Act of 2003, Public Law 108–173, as amended by Public Law 115–263, 21 U.S.C. 355 note—\$17,719;

(o) Section 814(a) of the Energy Independence and Security Act of 2007, 42 U.S.C. 17304—\$1,426,319; and

(p) Civil monetary penalties authorized by reference to the Federal Trade Commission Act under any other provision of law within the jurisdiction of the Commission—refer to the amounts set forth in paragraphs (c) through (f) of this section, as applicable.

By direction of the Commission.

**April J. Tabor,**  
*Secretary.*

[FR Doc. 2023–00382 Filed 1–10–23; 8:45 am]

**BILLING CODE 6750–01–P**

**COMMODITY FUTURES TRADING COMMISSION**

**17 CFR Part 143**

RIN 3038-AF19

**Annual Adjustment of Civil Monetary Penalties To Reflect Inflation—2023**

**AGENCY:** Commodity Futures Trading Commission.

**ACTION:** Final rule.

**SUMMARY:** The Commodity Futures Trading Commission (Commission) is amending its rule that governs the maximum amount of civil monetary penalties imposed under the Commodity Exchange Act (CEA), to adjust for inflation. This rule sets forth the maximum, inflation-adjusted dollar amount for civil monetary penalties (CMPs) assessable for violations of the CEA and Commission rules, regulations and orders thereunder. The rule, as amended, implements the Federal Civil Penalties Inflation Adjustment Act of 1990, as amended.

**DATES:** This rule is effective on January 11, 2023, and is applicable to penalties assessed after January 15, 2023.

**FOR FURTHER INFORMATION CONTACT:** Edward J. Riccobene, Associate Chief

Counsel, Division of Enforcement, at (202) 418-5327 or [ericcobene@cftc.gov](mailto:ericcobene@cftc.gov), Commodity Futures Trading Commission, 1155 21st Street NW, Washington, DC 20581.

**SUPPLEMENTARY INFORMATION:**

**I. Background**

The Federal Civil Penalties Inflation Adjustment Act of 1990 (FCPIAA)<sup>1</sup> requires the head of each Federal agency to periodically adjust for inflation the minimum and maximum amount of CMPs provided by law within the jurisdiction of that agency.<sup>2</sup> A 2015 amendment to the FCPIAA<sup>3</sup> required agencies to make an initial “catch-up” adjustment to its civil monetary penalties effective no later than August 1, 2016.<sup>4</sup> For every year thereafter effective not later than January 15th, the FCPIAA, as amended, requires agencies to make annual adjustments for inflation, with guidance from the Director of the Office of Management and Budget.<sup>5</sup>

**II. Commodity Exchange Act Civil Monetary Penalties**

The following sections of the CEA provide for CMPs that meet the FCPIAA definition<sup>6</sup> and these CMPs are, therefore, subject to the inflation

adjustment: Sections 6(c), 6b, and 6c of the CEA.<sup>7</sup>

**III. Annual Inflation Adjustment for Commodity Exchange Act Civil Monetary Penalties**

*A. Methodology*

The FCPIAA annual inflation adjustment, in the context of the CFTC’s CMPs, is determined by increasing the maximum penalty by a “cost-of-living adjustment”, rounded to the nearest multiple of one dollar.<sup>8</sup> Annual inflation adjustments are based on the percent change between the October Consumer Price Index for all Urban Consumers (CPI-U) preceding the date of the adjustment, and the prior year’s October CPI-U.<sup>9</sup> In this case, the October 2022 CPI-U (298.012)/October 2021 CPI-U (276.589) = 1.07745.<sup>10</sup> In order to complete the 2023 annual adjustment, the CFTC must multiply each of its most recent CMP amounts by the multiplier, 1.07745, and round to the nearest dollar.<sup>11</sup>

*B. Civil Monetary Penalty Adjustments*

Applying the FCPIAA annual inflation adjustment methodology results in the following amended CMPs:

U.S. Code citation	Civil monetary penalty description	Violations occurring on or after 11/02/2015			
		Penalty amount in 2021 Final Rule <sup>1</sup>	CPI-U multiplier	New adjusted penalty amount	
<b>Civil Monetary Penalty Imposed By The Commission In An Administrative Action</b>					
7 U.S.C. 9 (section 6(c) of the Commodity Exchange Act).	For any person other than a registered entity <sup>2</sup> .	Non-Manipulation or Attempted Manipulation.	\$180,714	1.07745	\$194,710
	For any person other than a registered entity <sup>2</sup> .	Manipulation or Attempted Manipulation.	1,303,559	1.07745	1,404,520
7 U.S.C. 13a (section 6b of the Commodity Exchange Act).	For a registered entity <sup>2</sup> or any of its directors, officers or employees.	Non-Manipulation or Attempted Manipulation.	995,471	1.07745	1,072,570
	For a registered entity <sup>2</sup> or any of its directors, officers or employees.	Manipulation or Attempted Manipulation.	1,303,559	1.07745	1,404,520
<b>Civil Monetary Penalty Imposed By A Federal District Court In A Civil Injunctive Action</b>					
7 U.S.C. 13a-1 (section 6c of the Commodity Exchange Act).	Any Person .....	Non-Manipulation or Attempted Manipulation.	199,094	1.07745	214,514

<sup>1</sup> The FCPIAA, Public Law 101-410 (1990), as amended, is codified at 28 U.S.C. 2461 note. The FCPIAA states that the purpose of the FCPIAA is to establish a mechanism that shall (1) allow for regular adjustment for inflation of civil monetary penalties; (2) maintain the deterrent effect of civil monetary penalties and promote compliance with the law; and (3) improve the collection by the Federal Government of civil monetary penalties.

<sup>2</sup> For the relevant CMPs within the Commission’s jurisdiction, the Act provides only for maximum amounts that can be assessed for each violation of the Act or the rules, regulations and orders promulgated thereunder; the Act does not set forth any minimum penalties. Therefore, the remainder of this release will refer only to CMP maximums.

<sup>3</sup> Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015, Public Law 114-74, 129 Stat. 584 (2015) (2015 Act), title VII, section 701.

<sup>4</sup> FCPIAA sections 4 and 5. See also, Adjustment of Civil Monetary Penalties for Inflation, 81 FR 41435 (June 27, 2016).

<sup>5</sup> FCPIAA sections 4 and 5. See also, Executive Office of the President, Office of Management and Budget (OMB) Memorandum, M-23-05, Implementation of Penalty Inflation Adjustments for 2023, Pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (Dec. 15, 2022) (2022 OMB Guidance) (<https://www.whitehouse.gov/wp-content/uploads/2022/12/M-23-05-CMP-CMP-Guidance.pdf>).

<sup>6</sup> FCPIAA section 3(2).

<sup>7</sup> U.S.C. 9, 13a-1, 13b. Criminal authorities may also seek fines for criminal violations of the CEA

(see 7 U.S.C. 13, 13(c), 13(d), 13(e), and 13b). The FCPIAA does not affect the amounts of these criminal penalties.

<sup>8</sup> FCPIAA sections 4 and 5.

<sup>9</sup> FCPIAA section 5(b)(1).

<sup>10</sup> The CPI-U is published by the Department of Labor. Interested parties may find the relevant Consumer Price Index on the internet. To access this information, go to the Consumer Price Index Home Page at: <http://www.bls.gov/cpi/>. Click the “CPI Data/Databases” heading, and select “All Urban Consumers (Current Series)”, “Top Picks.” Then check the box for “U.S. city average, All items—CUUR0000SA0”, and click the “Retrieve data” button.

<sup>11</sup> FCPIAA section 5(a). See also, 2022 OMB Guidance at 3.

U.S. Code citation	Civil monetary penalty description	Violations occurring on or after 11/02/2015		
		Penalty amount in 2021 Final Rule <sup>1</sup>	CPI-U multiplier	New adjusted penalty amount
	Any Person .....	1,303,559	1.07745	1,404,520

<sup>1</sup> Annual Adjustment of Civil Monetary Penalties to Reflect Inflation—2021, 86 FR 7802 (Feb. 2, 2021).  
<sup>2</sup> The term “Registered Entity” is defined in 7 U.S.C. 1a (section 1a of the Commodity Exchange Act).

The FCPIAA provides that any increase under the FCPIAA in a civil monetary penalty shall apply only to civil monetary penalties, including those whose associated violation predated such increase, which are assessed after the date the increase takes effect.<sup>12</sup> Thus, the new CMP amounts established by this rulemaking shall apply to penalties assessed after January 15, 2023, for violations that occurred on or after November 2, 2015, the effective date of the FCPIAA amendment requiring annual adjustments, the 2015 Act.

**IV. Administrative Compliance**

**A. Notice Requirement**

The FCPIAA specifically exempted from the Administrative Procedure Act (APA) the rulemakings required to implement annual inflation adjustments.<sup>13</sup> This means that the public procedure the APA generally requires—notice, an opportunity for comment, and a delay in effective date—is not required for agencies to issue regulations implementing the annual adjustment.<sup>14</sup> The Commission further notes that the notice and comment procedures of the APA do not apply to this rulemaking because the Commission is acting herein pursuant to statutory language that mandates that the Commission act in a nondiscretionary matter.<sup>15</sup>

**B. Regulatory Flexibility Act**

The Regulatory Flexibility Act<sup>16</sup> requires agencies with rulemaking authority to consider the impact of certain of their rules on small businesses. A regulatory flexibility analysis is only required for rules for which the agency publishes a general notice of proposed rulemaking pursuant

to section 553(b) or any other law.<sup>17</sup> Because, as discussed above, the Commission is not obligated by section 553(b) or any other law to publish a general notice of proposed rulemaking with respect to the revisions being made to Rule § 143.8, the Commission additionally is not obligated to conduct a regulatory flexibility analysis.

**C. Paperwork Reduction Act**

The Paperwork Reduction Act of 1995 (PRA),<sup>18</sup> which imposes certain requirements on Federal agencies, including the Commission, in connection with their conducting or sponsoring any collection of information as defined by the PRA, does not apply to this rule. This rule amendment does not contain information collection requirements that require the approval of the Office of Management and Budget.

**D. Consideration of Costs and Benefits**

Section 15(a) of the CEA<sup>19</sup> requires the Commission to consider the costs and benefits of its action before issuing a new regulation. Section 15(a) of the CEA further specifies that costs and benefits shall be evaluated in light of five broad areas of market and public concern: (1) protection of market participants and the public; (2) efficiency, competitiveness, and financial integrity of futures markets; (3) price discovery; (4) sound risk management practices; and (5) other public interest considerations.

The Commission believes that benefits of this rulemaking greatly outweigh the costs, if any. As the Commission understands, the statutory provisions by which it is making cost-of-living adjustments to the CMPs in Rule § 143.8 were enacted to ensure that

CMPs do not lose their deterrence value because of inflation. An analysis of the costs and benefits of these adjustments were made before enactment of the statutory provisions under which the Commission is operating, and limit the discretion of the Commission to the extent that there are no regulatory choices the Commission could make that would supersede the pre-enactment analysis with respect to the five factors enumerated in section 15(a) of the CEA, or any other factors.

**List of Subjects in 17 CFR Part 143**

Claims, Penalties.

For the reasons set forth in the preamble, the Commodity Futures Trading Commission amends part 143 of chapter I of title 17 of the Code of Federal Regulations as follows:

**PART 143—COLLECTION OF CLAIMS OWED THE UNITED STATES ARISING FROM ACTIVITIES UNDER THE COMMISSION'S JURISDICTION**

- 1. The authority citation for part 143 is revised to read as follows:

**Authority:** 7 U.S.C. 9, 9a, 12a(5), 13a, 13a–1(d), 13(a), 13b; 31 U.S.C. 3701–3720E; 28 U.S.C. 2461 note.

- 2. Amend § 143.8 by revising paragraph (b) to read as follows:

**§ 143.8 Inflation-adjusted civil monetary penalties.**

\* \* \* \* \*

(b) *2023 Inflation adjustment.* The maximum amount of each civil monetary penalty in the following charts applies to penalties assessed after January 15, 2023:

- (1) For non-manipulation or attempted manipulation violations:

<sup>12</sup> FCPIAA section 6.  
<sup>13</sup> FCPIAA section 4(b)(2).  
<sup>14</sup> 2022 OMB Guidance at 3–4.

<sup>15</sup> *Lake Carriers' Ass'n v. E.P.A.*, 652 F.3d 1, 10 (D.C. Cir. 2011).  
<sup>16</sup> 5 U.S.C. 601–612.

<sup>17</sup> 5 U.S.C. 603(a).  
<sup>18</sup> 44 U.S.C. 3507(d).  
<sup>19</sup> 7 U.S.C. 19(a).

TABLE 1 TO PARAGRAPH (b)(1)

U.S. Code citation	Civil monetary penalty description	Date of violation and corresponding penalty			
		10/23/2004 through 10/22/2008	10/23/2008 through 10/22/2012	10/23/2012 through 11/01/2015	11/02/2015 to present
<b>Civil Monetary Penalty Imposed By The Commission In An Administrative Action</b>					
7 U.S.C. 9 (section 6(c) of the Commodity Exchange Act).	For any person other than a registered entity <sup>1</sup> ....	\$130,000	\$130,000	\$140,000	\$194,710
7 U.S.C. 13a (section 6b of the Commodity Exchange Act).	For a registered entity <sup>1</sup> or any of its directors, officers or employees.	625,000	675,000	700,000	1,072,570
<b>Civil Monetary Penalty Imposed By A Federal District Court In A Civil Injunctive Action</b>					
7 U.S.C. 13a-1 (section 6c of the Commodity Exchange Act).	Any Person .....	130,000	140,000	140,000	214,514

<sup>1</sup> The term “registered entity” is defined in 7 U.S.C. 1a (section 1a of the Commodity Exchange Act).

(2) For manipulation or attempted manipulation violations:

TABLE 1 TO PARAGRAPH (b)(2)

U.S. Code citation	Civil monetary penalty description	Date of violation and corresponding penalty			
		10/23/2004 through 05/21/2008	05/22/2008 through 08/14/2011	08/15/2011 through 11/01/2015	11/02/2015 to present
<b>Civil Monetary Penalty Imposed By The Commission In An Administrative Action</b>					
7 U.S.C. 9 (section 6(c) of the Commodity Exchange Act).	For any person other than a registered entity <sup>1</sup> ....	\$130,000	\$1,000,000	\$1,025,000	\$1,404,520
7 U.S.C. 13a (section 6b of the Commodity Exchange Act).	For a registered entity <sup>1</sup> or any of its directors, officers or employees.	625,000	1,000,000	1,025,000	1,404,520
<b>Civil Monetary Penalty Imposed By A Federal District Court In A Civil Injunctive Action</b>					
7 U.S.C. 13a-1 (section 6c of the Commodity Exchange Act).	Any Person .....	130,000	1,000,000	1,025,000	1,404,520

<sup>1</sup> The term “registered entity” is defined in 7 U.S.C. 1a (section 1a of the Commodity Exchange Act).

Issued in Washington, DC, on January 6, 2023, by the Commission.

**Robert Sidman,**  
*Deputy Secretary of the Commission.*

**Note:** The following appendix will not appear in the Code of Federal Regulations.

**Appendix to Annual Adjustment of Civil Monetary Penalties to Reflect Inflation—2023—Commission Voting Summary**

On this matter, Chairman Behnam and Commissioners Johnson, Goldsmith Romero, Mersinger, and Pham voted in the affirmative. No Commissioner voted in the negative.

[FR Doc. 2023-00396 Filed 1-10-23; 8:45 am]

**BILLING CODE 6351-01-P**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Food and Drug Administration**

**21 CFR Part 1**

[Docket No. FDA-2017-D-5225]

**Foreign Supplier Verification Programs for Importers of Food for Humans and Animals: Guidance for Industry; Availability**

**AGENCY:** Food and Drug Administration, HHS.

**ACTION:** Notification of availability.

**SUMMARY:** The Food and Drug Administration (FDA or we) is announcing the availability of a final guidance entitled “Foreign Supplier Verification Programs for Importers of Food for Humans and Animals: Guidance for Industry.” This guidance document provides our thinking on how importers of food for humans and animals can comply with the regulation on foreign supplier verification programs (FSVPs) issued on November 27, 2015. The guidance announced in

this notice finalizes the draft guidance of the same title dated January 24, 2018.

**DATES:** The announcement of guidance is published in the **Federal Register** on January 11, 2023.

**ADDRESSES:** You may submit comments on any guidance at any time as follows:

*Electronic Submissions*

Submit electronic comments in the following way:

- **Federal eRulemaking Portal:** <https://www.regulations.gov>. Follow the instructions for submitting comments. Comments submitted electronically, including attachments, to <https://www.regulations.gov> will be posted to the docket unchanged. Because your comment will be made public, you are solely responsible for ensuring that your comment does not include any confidential information that you or a third party may not wish to be posted, such as medical information, your or anyone else’s Social Security number, or confidential business information, such as a manufacturing process. Please note that if you include your name, contact information, or other information that

identifies you in the body of your comments, that information will be posted on <https://www.regulations.gov>.

- If you want to submit a comment with confidential information that you do not wish to be made available to the public, submit the comment as a written/paper submission and in the manner detailed (see “Written/Paper Submissions” and “Instructions”).

#### Written/Paper Submissions

Submit written/paper submissions as follows:

- *Mail/Hand delivery/Courier (for written/paper submissions):* Dockets Management Staff (HFA-305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.

- For written/paper comments submitted to the Dockets Management Staff, FDA will post your comment, as well as any attachments, except for information submitted, marked and identified, as confidential, if submitted as detailed in “Instructions.”

*Instructions:* All submissions received must include the Docket No. FDA-2017-D-5225 for “Foreign Supplier Verification Programs for Importers of Food for Humans and Animals: Guidance for Industry.” Received comments will be placed in the docket and, except for those submitted as “Confidential Submissions,” publicly viewable at <https://www.regulations.gov> or at the Dockets Management Staff between 9 a.m. and 4 p.m., Monday through Friday, 240-402-7500.

- **Confidential Submissions**—To submit a comment with confidential information that you do not wish to be made publicly available, submit your comments only as a written/paper submission. You should submit two copies total. One copy will include the information you claim to be confidential with a heading or cover note that states “THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION.” The Agency will review this copy, including the claimed confidential information, in its consideration of comments. The second copy, which will have the claimed confidential information redacted/blacked out, will be available for public viewing and posted on <https://www.regulations.gov>. Submit both copies to the Dockets Management Staff. If you do not wish your name and contact information to be made publicly available, you can provide this information on the cover sheet and not in the body of your comments and you must identify this information as “confidential.” Any information marked as “confidential” will not be disclosed except in accordance with 21 CFR 10.20 and other applicable disclosure law. For

more information about FDA’s posting of comments to public dockets, see 80 FR 56469, September 18, 2015, or access the information at: <https://www.govinfo.gov/content/pkg/FR-2015-09-18/pdf/2015-23389.pdf>.

*Docket:* For access to the docket to read background documents or the electronic and written/paper comments received, go to <https://www.regulations.gov> and insert the docket number, found in brackets in the heading of this document, into the “Search” box and follow the prompts and/or go to the Dockets Management Staff, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852, 240-402-7500.

You may submit comments on any guidance at any time (see 21 CFR 10.115(g)(5)).

Submit written requests for single copies of the draft guidance to the Center for Food Safety and Applied Nutrition, Food and Drug Administration, 5001 Campus Dr., College Park, MD 20740. Send two self-addressed adhesive labels to assist that office in processing your request. See the **SUPPLEMENTARY INFORMATION** section for electronic access to the draft guidance.

**FOR FURTHER INFORMATION CONTACT:** Compliance Policy Staff, Office of Compliance, Center for Food Safety and Applied Nutrition, Food and Drug Administration, 5001 Campus Dr., College Park, MD 20740, [CFSANCompliancePolicy@fda.hhs.gov](mailto:CFSANCompliancePolicy@fda.hhs.gov).

#### **SUPPLEMENTARY INFORMATION:**

##### **I. Background**

In the **Federal Register** of November 27, 2015 (80 FR 74226), we issued a final rule adopting a regulation on FSVPs for importers of food for humans and animals (FSVP final rule) (see, 21 CFR part 1, subpart L). The FSVP final rule implements section 301 of the FDA Food Safety Modernization Act (FSMA) (Pub. L. 111-353), which enables the Agency to better protect public health by helping to ensure the safety and security of the food supply.

Section 301 of FSMA added section 805 to the Federal Food, Drug, and Cosmetic Act (FD&C Act) (21 U.S.C. 384a) to require persons who import food into the United States to perform risk-based foreign supplier verification activities. In addition to directing FDA to issue regulations on the content of FSVPs, section 805 of the FD&C Act directs FDA to issue guidance to assist importers in developing FSVPs.

In accordance with section 805 of the FD&C Act, we are announcing the availability of a final guidance entitled, “Foreign Supplier Verification Programs

for Importers of Food for Humans and Animals: Guidance for Industry.” This guidance provides our thinking on how to comply with the FSVP regulation, including, but not limited to, requirements to analyze the hazards in food, evaluate a potential foreign supplier’s performance and the risk posed by a food, and determine and conduct appropriate foreign supplier verification activities. The guidance also addresses how importers can meet the modified FSVP requirements for importers of dietary supplements, very small importers, importers of food from certain small foreign suppliers, and importers of food from countries whose food safety systems we have officially recognized as comparable or determined to be equivalent to that of the United States.

In the **Federal Register** of January 24, 2018 (83 FR 3443) we made available a draft guidance for industry entitled “Foreign Supplier Verification Programs for Importers of Food for Humans and Animals” and gave interested parties an opportunity to submit comments by May 25, 2018, for us to consider before beginning work on the final version of the guidance. We received several comments on the draft guidance and those comments were considered as the guidance was finalized. A summary of changes includes additional clarification regarding to what foods the FSVP regulation applies, what information must be included in the FSVP, who may develop and perform FSVP activities, what hazard analysis must be conducted, what foreign supplier approval and verification activities must be conducted, what requirements apply for importing a food for which the hazards will be controlled after importation, how FSVP records must be maintained, what FSVP requirements apply for imported dietary supplement components, and what FSVP requirements apply to very small importers or when importing food for certain small foreign suppliers. In addition, editorial changes were made to improve clarity. The guidance announced in this notice finalizes the draft guidance dated January 24, 2018.

This guidance is being issued consistent with FDA’s good guidance practices regulation (21 CFR 10.115). The guidance represents the current thinking of FDA on “Foreign Supplier Verification Programs for Importers of Food for Humans and Animals: Guidance for Industry.” It does not establish any rights for any person and is not binding on FDA or the public. You can use an alternative approach if it satisfies the requirements of the applicable statutes and regulations.

## II. Paperwork Reduction Act of 1995

While this guidance contains no collection of information, it does refer to previously approved FDA collections of information. Therefore, clearance by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501–3521) is not required for this guidance. The previously approved collections of information are subject to review by OMB under the PRA. The collections of information in 21 CFR part 1, subpart L have been approved under OMB control number 0910–0752.

## III. Electronic Access

Persons with access to the internet may obtain the guidance at either <https://www.fda.gov/FoodGuidances>, <https://www.fda.gov/regulatory-information/search-fda-guidance-documents>, or <https://www.regulations.gov>. Use the FDA website listed in the previous sentence to find the most current version of the guidance.

Dated: January 5, 2023.

**Lauren K. Roth,**

*Associate Commissioner for Policy.*

[FR Doc. 2023–00391 Filed 1–10–23; 8:45 am]

BILLING CODE 4164–01–P

## DEPARTMENT OF STATE

### 22 CFR Parts 35, 103, 127, and 138

[Public Notice: 11959]

RIN 1400–AF59

### Department of State 2023 Civil Monetary Penalties Inflationary Adjustment

**AGENCY:** Department of State.

**ACTION:** Final rule.

**SUMMARY:** This final rule is issued to adjust the civil monetary penalties (CMP) for regulatory provisions maintained and enforced by the Department of State. The revised CMP adjusts the amount of civil monetary penalties assessed by the Department of State based on the December 2022 guidance from the Office of Management and Budget and by recent legislation. For penalties adjusted according to the December 2022 guidance, the new amounts will apply only to those penalties assessed on or after the effective date of this rule, regardless of the date on which the underlying facts or violations occurred. For the penalty adjusted according to recent legislation, the new amounts will apply only to those penalties assessed

for violations occurring on or after December 27, 2022.

**DATES:** This final rule is effective on January 11, 2023.

**FOR FURTHER INFORMATION CONTACT:** Alice Kottmyer, Attorney-Adviser, Office of Management, [kottmyeram@state.gov](mailto:kottmyeram@state.gov). ATTN: Regulatory Change, CMP Adjustments, (202) 647–2318.

**SUPPLEMENTARY INFORMATION:** The Federal Civil Penalties Inflation Adjustment Act of 1990, Pub. L. 101–410, as amended by the Debt Collection Improvement Act of 1996, Pub. L. 104–134, required the head of each agency to adjust its CMPs for inflation no later than October 23, 1996 and required agencies to make adjustments at least once every four years thereafter. The Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015, Section 701 of Pub. L. 114–74 (the 2015 Act) further amended the 1990 Act by requiring agencies to adjust CMPs, if necessary, pursuant to a “catch-up” adjustment methodology prescribed by the 2015 Act, which mandated that the catch-up adjustment take effect no later than August 1, 2016. Additionally, the 2015 Act required agencies to make annual adjustments to their respective CMPs in accordance with guidance issued by the Office of Management and Budget (OMB).

Based on these statutes, the Department of State (the Department) published a final rule in June 2016<sup>1</sup> to implement the “catch-up” provisions; and annual updates to its CMPs in January 2017,<sup>2</sup> January 2018,<sup>3</sup> March 2019 (delayed due to the Government shutdown),<sup>4</sup> January 2020,<sup>5</sup> February 2021 (delayed due to transition issues),<sup>6</sup> and January 2022.<sup>7</sup>

On December 15, 2022, OMB notified agencies that the annual cost-of-living adjustment multiplier for fiscal year (FY) 2023, based on the Consumer Price Index, is 1.07745. Additional information may be found in OMB Memorandum M–23–05 at: <https://www.whitehouse.gov/wp-content/uploads/2022/12/M-23-05-CMP-CMP-Guidance.pdf>. This final rule amends Department CMPs for fiscal year 2023, with the exception of the CMP for violation of 22 U.S.C 2778 at 22 CFR 127.10(a)(1)(i), which is amended in accordance with section 9708 of the James M. Inhofe National Defense

Authorization Act for Fiscal Year 2023, Pub. L. 117–263.

## Overview of the Areas Affected by This Rule

Within the Department of State (title 22, Code of Federal Regulations), this rule affects four areas:

(1) Part 35, which implements the Program Fraud Civil Remedies Act of 1986 (PFCRA), codified at 31 U.S.C. 3801–3812;

(2) Part 103, which implements the Chemical Weapons Convention Implementation Act of 1998 (CWC Act) (22 U.S.C. 6761);

(3) Part 127, which implements the penalty provisions of sections 38(e), 39A(c), and 40(k) of the Arms Export Control Act (AECA) (22 U.S.C. 2778(e), 2779a(c), and 2780(k)); and

(4) Part 138, which implements section 319 of Pub. L. 101–121, codified at 31 U.S.C. 1352, which prohibits recipients of Federal contracts, grants, and loans from using appropriated funds for lobbying the executive or legislative branches of the Federal Government in connection with a specific contract.

## Specific Changes to 22 CFR Made by this Rule

### I. Part 35

The PFCRA, enacted in 1986, authorizes agencies, with approval from the Department of Justice, to pursue individuals or firms for false claims. Applying the FY 2023 inflationary adjustment of 1.07745, the new maximum penalty is \$13,508 for each false claim or statement, up to a maximum of \$405,270.

### II. Part 103

The CWC Act provided domestic implementation of the Convention on the Prohibition of the Development, Production, Stockpiling, and Use of Chemical Weapons and on Their Destruction. The penalty provisions of the CWC Act are codified at 22 U.S.C. 6761. Applying the FY 2023 multiplier, the new maximum amounts are as follows: prohibited acts related to inspections, \$45,429; for recordkeeping violations, \$9,086.

### III. Part 127

The Assistant Secretary of State for Political-Military Affairs is responsible for the imposition of CMPs under the International Traffic in Arms Regulations (ITAR), which is administered by the Directorate of Defense Trade Controls (DDTC).

<sup>1</sup> 81 FR 36771 (Jun. 8, 2016).

<sup>2</sup> 82 FR 3168 (Jan. 11, 2017).

<sup>3</sup> 83 FR 234 (Jan. 3, 2018).

<sup>4</sup> 84 FR 9957 (Mar. 19, 2019).

<sup>5</sup> 85 FR 2020 (Jan. 14, 2020).

<sup>6</sup> 86 FR 7804 (Feb. 2, 2021).

<sup>7</sup> 87 FR 1072 (Jan. 10, 2022).



(1) AECA Section 38(e)

Amended in accordance with section 9708 of Public Law 117–263, the new maximum penalty under 22 U.S.C. 2778 (22 CFR 127.10(a)(1)(i)) is the greater of \$1,200,000 or the amount that is twice the value of the transaction that is the basis of the violation with respect to which the penalty is imposed.

(2) AECA Section 39A(c)

Applying the multiplier, the new maximum penalty under 22 U.S.C. 2779a (22 CFR 127.10(a)(1)(ii)) is \$996,685, or five times the amount of

the prohibited payment, whichever is greater.

(3) AECA Section 40(k)

Applying the multiplier, the new maximum penalty under 22 U.S.C. 2780 (22 CFR 127.10(a)(1)(iii)) is \$1,186,338.

IV. Part 138

Section 319 of Public Law 101–121, codified at 31 U.S.C. 1352, provides penalties for recipients of Federal contracts, grants, and loans who use appropriated funds to lobby the executive or legislative branches of the Federal Government in connection with a specific contract, grant, or loan. Any

person who violates that prohibition is subject to a civil penalty. The statute also requires each person who requests or receives a Federal contract, grant, cooperative agreement, loan, or a Federal commitment to insure or guarantee a loan, to disclose any lobbying; there is a penalty for failure to disclose.

Applying the FY 2023 multiplier, the maximum penalties for both improper expenditures and failure to disclose, is: for first offenders, \$23,343; for others, not less than \$23,727, and not more than \$237,268.

Summary

FY 2023 MULTIPLIER: 1.07745

Citation in 22 CFR	FY22 Max penalties	New (FY 23) max penalties
§ 35.3 .....	\$12,537 up to \$376,138 .....	\$13,508 up to \$405,270.
§ 103.6(a)(1) <i>Prohibited Acts</i> .....	\$42,163 .....	\$45,429.
§ 103.6(a)(2) <i>Record-keeping Violations</i> .....	\$8,433 .....	\$9,086.
§ 127.10(a)(1)(i) .....	\$1,272,251 .....	the greater of \$1,200,000 or the amount that is twice the value of the transaction that is the basis of the violation with respect to which the penalty is imposed.
§ 127.10(a)(1)(ii) .....	\$925,041 or five times the amount of the prohibited payment, whichever is greater.	\$996,685, or five times the amount of the prohibited payment, whichever is greater.
§ 127.10(a)(1)(iii) .....	\$1,101,061 .....	\$1,186,338.
§ 138.400 <i>First Offenders</i> ..	\$21,665 .....	\$23,343.
§ 138.400 .....	\$22,021 up to \$220,213 .....	\$23,727 up to \$237,268.

Effective Date of Penalties

The revised CMP amounts for all penalties other than the penalty at 22 CFR 127.10(a)(1)(i) will go into effect on the date this rule is published. All violations for which those CMPs are assessed on or after the effective date of this rule, regardless of whether the violation occurred before the effective date, will be assessed at the adjusted penalty level. For the penalty at 22 CFR 127.10(a)(1)(i) adjusted according to section 9708 of Public Law 117–263, the new amounts will apply only to those penalties assessed for violations occurring on or after December 27, 2022.

Future Adjustments and Reporting

The 2015 Act directed agencies to undertake an annual review of CMPs using a formula prescribed by the statute. Annual adjustments to CMPs are made in accordance with the guidance issued by OMB. As in this rulemaking, the Department of State will publish notification of annual inflation adjustments to CMPs in the **Federal Register** no later than January 15 of each year, with the adjusted amount taking effect immediately upon publication.

Regulatory Analysis and Notices

Administrative Procedure Act

The Department of State is publishing this rule using the “good cause” exception to the Administrative Procedure Act (5 U.S.C. 553(b)), as the Department has determined that public comment on this rulemaking would be impractical, unnecessary, or contrary to the public interest. This rulemaking is mandatory and entirely without agency discretion; it implements Public Law 114–74. See 5 U.S.C. 553(d)(3).

Regulatory Flexibility Act

Because this rulemaking is exempt from 5 U.S.C. 553, a regulatory flexibility analysis is not required.

Unfunded Mandates Reform Act of 1995

This rule does not involve a mandate that will result in the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector, of \$100 million or more in any year and it will not significantly or uniquely affect small governments. Therefore, no actions were deemed necessary under the provisions of the Unfunded Mandates Reform Act of 1995.

Congressional Review Act

This rule is not a major rule within the meaning of the Congressional Review Act, 5 U.S.C. 801 *et seq.*

Executive Orders 12372 and 13132

This amendment will not have substantial direct effects on the States, on the relationship between the National Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 13132, it is determined that this amendment does not have sufficient federalism implications to require consultations or warrant the preparation of a federalism summary impact statement.

Executive Orders 12866 and 13563

The Department believes that benefits of the rulemaking outweigh any costs, and there are no feasible alternatives to this rulemaking. Pursuant to M–23–05, the Office of Information and Regulatory Affairs (OIRA) has determined that agency regulations that (1) exclusively implement the annual adjustment, (2) are consistent with this guidance, and (3) have an annual impact of less than \$100 million, are generally not significant regulatory actions under E.O.

12866. Therefore, agencies are generally not required to submit regulations satisfying those criteria to OIRA for review. This regulation satisfies all of those criteria.

#### *Executive Order 12988*

The Department of State has reviewed the amendment in light of Executive Order 12988 to eliminate ambiguity, minimize litigation, establish clear legal standards, and reduce burden.

#### *Executive Order 13175*

The Department of State has determined that this rulemaking will not have tribal implications, will not impose substantial direct compliance costs on Indian Tribal governments, and will not preempt Tribal law. Accordingly, Executive Order 13175 does not apply to this rulemaking.

#### *Paperwork Reduction Act*

This rulemaking does not impose or revise any information collections subject to 44 U.S.C. Chapter 35.

#### List of Subjects

##### *22 CFR Part 35*

Administrative practice and procedure, Claims, Fraud, Penalties.

##### *22 CFR Part 103*

Administrative practice and procedure, Chemicals, Classified information, Foreign relations, Freedom of information, International organization, Investigations, Penalties, Reporting and recordkeeping requirements.

##### *22 CFR Part 127*

Arms and munitions, Crime, Exports, Penalties, Seizures and forfeitures.

##### *22 CFR Part 138*

Government contracts, Grant programs, Loan programs, Lobbying, Penalties, Reporting and recordkeeping requirements.

For the reasons set forth above, 22 CFR parts 35, 103, 127, and 138 are amended as follows:

#### **PART 35—PROGRAM FRAUD CIVIL REMEDIES**

■ 1. The authority citation for part 35 continues to read as follows:

**Authority:** 22 U.S.C. 2651a; 31 U.S.C. 3801 *et seq.*; Pub. L. 114–74, 129 Stat. 584.

##### **§ 35.3 [Amended]**

■ 2. In § 35.3:

■ a. Remove “\$12,537” and add in its place “\$13,508”, wherever it occurs.

■ b. In paragraph (f), remove “\$376,138” and add in its place “\$405,270”.

#### **PART 103—REGULATIONS FOR IMPLEMENTATION OF THE CHEMICAL WEAPONS CONVENTION AND THE CHEMICAL WEAPONS CONVENTION IMPLEMENTATION ACT OF 1998 ON THE TAKING OF SAMPLES AND ON ENFORCEMENT OF REQUIREMENTS CONCERNING RECORDKEEPING AND INSPECTIONS**

■ 3. The authority citation for part 103 continues to read as follows:

**Authority:** 22 U.S.C. 2651a; 22 U.S.C. 6701 *et seq.*; Pub. L. 114–74, 129 Stat. 584.

##### **§ 103.6 [Amended]**

■ 4. In § 103.6:

■ a. In paragraph (a)(1), remove “\$42,163” and add in its place “\$45,429”; and

■ b. In paragraph (a)(2), remove “\$8,433” and add in its place “\$9,086”.

#### **PART 127—VIOLATIONS AND PENALTIES**

■ 5. The authority citation for part 127 continues to read as follows:

**Authority:** Sections 2, 38, and 42, Pub. L. 90–629, 90 Stat. 744 (22 U.S.C. 2752, 2778, 2791); 22 U.S.C. 401; 22 U.S.C. 2651a; 22 U.S.C. 2779a; 22 U.S.C. 2780; E.O. 13637, 78 FR 16129; Pub. L. 114–74, 129 Stat. 584.

##### **§ 127.10 [Amended]**

■ 6. In § 127.10:

■ a. In paragraph (a)(1)(i), remove “\$1,272, 251” and add in its place “the greater of \$1,200,000 or the amount that is twice the value of the transaction that is the basis of the violation with respect to which the penalty is imposed”;

■ b. In paragraph (a)(1)(ii), remove “\$925,041” and add in its place “\$996,685”; and

■ c. In paragraph (a)(1)(iii), remove “\$1,101,061” and add in its place “\$1,186,338”.

#### **PART 138—RESTRICTIONS ON LOBBYING**

■ 7. The authority citation for part 138 continues to read as follows:

**Authority:** 22 U.S.C. 2651a; 31 U.S.C. 1352; Pub. L. 114–74, 129 Stat. 584.

##### **§ 138.400 [Amended]**

■ 8. In § 138.400:

■ a. Remove “\$22,021” and “\$220,213” and add in their place “\$23,727” and “\$237,268”, respectively, wherever they occur.

■ b. In paragraph (e), remove “\$21,665” and add in its place “\$23,343”.

Kevin E. Bryant,

*Deputy Director, Office of Directives Management, Department of State.*

[FR Doc. 2023–00353 Filed 1–10–23; 8:45 am]

BILLING CODE 4710–10–P

#### **DEPARTMENT OF THE TREASURY**

##### **Office of Foreign Assets Control**

##### **31 CFR Part 591**

#### **Publication of Venezuela Sanctions Regulations Web General Licenses 1, 2, 4, and Subsequent Iterations**

**AGENCY:** Office of Foreign Assets Control, Treasury.

**ACTION:** Publication of Web General Licenses.

**SUMMARY:** The Department of the Treasury’s Office of Foreign Assets Control (OFAC) is publishing seven general licenses (GLs) issued in the Venezuela Sanctions program: GLs 1, 2, 2A, 4, 4A, 4B, and 4C, each of which was previously made available on OFAC’s website.

**DATES:** GL 1 was issued on August 25, 2017. See **SUPPLEMENTARY INFORMATION** for additional relevant dates.

**FOR FURTHER INFORMATION CONTACT:** OFAC: Assistant Director for Licensing, 202–622–2480; Assistant Director for Regulatory Affairs, 202–622–4855; or Assistant Director for Sanctions Compliance & Evaluation, 202–622–2490.

##### **SUPPLEMENTARY INFORMATION:**

##### **Electronic Availability**

This document and additional information concerning OFAC are available on OFAC’s website: [www.treas.gov/ofac](http://www.treas.gov/ofac).

##### **Background**

On August 25, 2017, OFAC issued GLs 1, 2, and 4 to authorize certain transactions otherwise prohibited by Executive Order (E.O.) 13808 of August 24, 2017, “Imposing Additional Sanctions with Respect to the Situation in Venezuela” (82 FR 41155, August 29, 2017). Subsequently, OFAC issued one further iteration of GL 2 and three further iterations of GL 4. On August 5, 2019 OFAC issued GL 2A pursuant to E.O. 13808 and E.O. 13884 of August 5, 2019, “Blocking Property of the Government of Venezuela” (84 FR 38843, August 7, 2019). GL 2A superseded GL 2. On March 22, 2019 OFAC issued GL 4A pursuant to E.O.

13808 and E.O. 13850 of November 1, 2018, “Blocking Property of Additional Persons Contributing to the Situation in Venezuela” (83 FR 55243, November 2, 2018). GL 4A superseded GL 4. On April 17, 2019, OFAC issued GL 4B, which superseded GL 4A. On August 5, 2019, OFAC issued GL 4C pursuant to E.O.s 13808, 13850, and 13884. GL 4C superseded GL 4B. On November 22, 2019, OFAC incorporated the prohibitions of Executive Order 13808, as well as any other Executive orders issued pursuant to the national emergency declared in Executive Order 13692 of March 8, 2015, into the Venezuelan Sanctions Regulations, 31 CFR part 591. Each GL was made available on OFAC’s website ([www.treas.gov/ofac](http://www.treas.gov/ofac)) when it was issued. The text of these GLs is provided below.

**OFFICE OF FOREIGN ASSETS CONTROL**

**Executive Order of August 24, 2017**

**Imposing Additional Sanctions With Respect to the Situation in Venezuela**

**GENERAL LICENSE 1**

**Authorizing Certain Activities Necessary to Wind Down Existing Contracts**

(a) Except as provided in paragraph (b) of this general license, all transactions prohibited by Subsections 1(a)(i)–(iii) and Subsection 1(b) of Executive Order of August 24, 2017, “Imposing Additional Sanctions with Respect to the Situation in Venezuela,” that are ordinarily incident and necessary to wind down contracts or other agreements that were in effect prior to August 25, 2017, are authorized through September 24, 2017.

(b) This general license does not authorize activities that are otherwise prohibited under Executive Order of August 24, 2017, Executive Order 13692 of March 8, 2015, or any part of 31 CFR Chapter V.

(c) U.S. persons participating in transactions authorized by this general license are required, within 10 business days after the transactions take place, to file a detailed report, including the parties involved, the value of the transactions, and the dates of the transactions, with the Office of Foreign Assets Control, Sanctions Compliance and Evaluation Division, U.S. Treasury Department, 1500 Pennsylvania Avenue NW, Freedman’s Bank Building, Washington, DC 20220. Reports may also be filed via email to [OFACReport@treasury.gov](mailto:OFACReport@treasury.gov).

Andrea Gacki,

*Acting Director, Office of Foreign Assets Control,*

Dated: August 25, 2017.

**OFFICE OF FOREIGN ASSETS CONTROL**

**Executive Order of August 24, 2017**

**Imposing Additional Sanctions With Respect to the Situation in Venezuela**

**GENERAL LICENSE 2**

**Authorizing Certain Transactions Involving CITGO Holding, Inc.**

(a) Except as provided in paragraph (b) of this general license, all transactions prohibited by Subsections 1(a)(i), 1(a)(ii), and 1(b) of Executive Order of August 24, 2017, “Imposing Additional Sanctions with Respect to the Situation in Venezuela,” where the only Government of Venezuela entities involved are CITGO Holding, Inc. and any of its subsidiaries, are authorized.

(b) This general license does not authorize any transaction that is otherwise prohibited under Executive Order of August 24, 2017, Executive Order 13692 of March 8, 2015, or any part of 31 CFR Chapter V.

Andrea Gacki,  
*Acting Director, Office of Foreign Assets Control,*

Dated: August 25, 2017.

**OFFICE OF FOREIGN ASSETS CONTROL**

**Executive Order 13808 of August 24, 2017**

**Imposing Additional Sanctions With Respect to the Situation in Venezuela**

**Executive Order of August 5, 2019**

**Blocking Property of the Government of Venezuela**

**GENERAL LICENSE 2A**

**Authorizing Certain New Debt, New Equity, and Securities Transactions Involving PDV Holding, Inc. and CITGO Holding, Inc.**

(a) Except as provided in paragraph (b) of this general license, all transactions and activities prohibited by Subsections 1(a)(i), 1(a)(ii), and 1(b) of Executive Order (E.O.) 13808, as amended by E.O. 13857 of January 25, 2019, or E.O. of August 5, 2019, where the only Government of Venezuela entities involved are PDV Holding, Inc. (PDVH), CITGO Holding, Inc., or any of their subsidiaries, are authorized.

(b) This general license does not authorize any transaction that is otherwise prohibited by E.O. of August 5, 2019, or E.O. 13835 of May 21, 2018, E.O. 13827 of March 19, 2018, E.O. 13850 of November 1, 2018, E.O. 13808, or E.O. 13692 of March 8, 2015, each as

amended by E.O. 13857, or by any part of 31 CFR chapter V.

(c) Effective August 5, 2019, General License No. 2, dated August 25, 2017, is replaced and superseded in its entirety by this General License No. 2A.

Andrea Gacki

*Director, Office of Foreign Assets Control,*

Dated: August 5, 2019.

**OFFICE OF FOREIGN ASSETS CONTROL**

**Executive Order of August 24, 2017**

**Imposing Additional Sanctions with Respect to the Situation in Venezuela**

**GENERAL LICENSE 4**

**Authorizing New Debt Transactions Related to the Exportation or Reexportation of Agricultural Commodities, Medicine, Medical Devices, or Replacement Parts and Components**

(a) Except as provided in paragraph (b) of this general license, all transactions related to, the provision of financing for, and other dealings in new debt related to the exportation or reexportation, from the United States or by a U.S. person, wherever located, of agricultural commodities, medicine, medical devices, or replacement parts and components for medical devices to Venezuela, or to persons in third countries purchasing specifically for resale to Venezuela, provided that the exportation or reexportation is licensed or otherwise authorized by the Department of Commerce under the provisions of the Export Administration Act of 1979, as amended (50 U.S.C. 4601–4623) (see the Export Administration Regulations, 15 CFR parts 730 through 774), are hereby authorized.

*(b) Limitations.*

(1) Nothing in this general license relieves any exporter from compliance with the export application requirements of another Federal agency.

(2) This general license does not authorize any transaction that is otherwise prohibited by Executive Order of August 24, 2017, “Imposing Additional Sanctions with Respect to the Situation in Venezuela,” Executive Order 13692 of March 8, 2015, or any part of 31 CFR Chapter V.

(c) *Covered items.* For the purposes of this general license, agricultural commodities, medicine, and medical devices are defined below.

(1) *Agricultural commodities.* For the purposes of this general license, agricultural commodities are:

(i) Products that fall within the term “agricultural commodity” as defined in

section 102 of the Agricultural Trade Act of 1978 (7 U.S.C. 5602);

(ii) Food for humans (including raw, processed, and packaged foods; live animals; vitamins and minerals; food additives or supplements; and bottled drinking water) or animals (including animal feeds);

(iii) Seeds for food crops;

(iv) Fertilizers or organic fertilizers; or

(v) Reproductive materials (such as live animals, fertilized eggs, embryos, and semen) for the production of food animals.

(2) *Medicine*. For the purposes of this general license, medicine is an item that falls within the definition of the term “drug” in section 201 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 321).

(3) *Medical devices*. For the purposes of this general license, a medical device is an item that falls within the definition of “device” in section 201 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 321).

Andrea Gacki

*Acting Director, Office of Foreign Assets Control,*

Dated: August 25, 2017.

#### OFFICE OF FOREIGN ASSETS CONTROL

##### Executive Order 13808 of August 24, 2017

##### Imposing Additional Sanctions With Respect to the Situation in Venezuela

##### Executive Order 13850 of November 1, 2018

##### Blocking Property of Additional Persons Contributing to the Situation in Venezuela

#### GENERAL LICENSE 4A

##### Authorizing New Debt Transactions and Transactions Involving Certain Banks Related to the Exportation or Reexportation of Agricultural Commodities, Medicine, Medical Devices, or Replacement Parts and Components

(a) Except as provided in paragraph (b) of this general license, all transactions related to, the provision of financing for, and other dealings in new debt prohibited by Executive Order (E.O.) 13808, as amended by E.O. 13857 of January 25, 2019 (“Taking Additional Steps to Address the National Emergency With Respect to Venezuela”), and transactions involving Banco de Venezuela, S.A. Banco Universal (Banco de Venezuela) or Banco Bicentenario del Pueblo, de la Clase Obrera, Mujer y Comunas, Banco Universal C.A. (Banco Bicentenario del Pueblo) prohibited by E.O. 13850, as

amended by E.O. 13857, are authorized, provided that they are ordinarily incident and necessary to:

(1) The exportation or reexportation, from the United States or by a U.S. person, wherever located, of agricultural commodities, medicine, medical devices, or replacement parts and components for medical devices to Venezuela, or to persons in third countries purchasing specifically for resale to Venezuela, and provided that the exportation or reexportation is licensed or otherwise authorized by the Department of Commerce under the provisions of the Export Administration Act of 1979, as amended (50 U.S.C. 4601–4623) or its successor, the Export Control Reform Act of 2018 (see the Export Administration Regulations, 15 CFR parts 730 through 774 (EAR)); or

(2) The exportation or reexportation of agricultural commodities, medicine, medical devices, or replacement parts and components for medical devices that are not subject to the EAR, to Venezuela, or to persons in third countries purchasing specifically for resale to Venezuela, and provided that the items to be exported or reexported are not listed under any multilateral export control regime.

#### (b) *Limitations*.

(1) Nothing in this general license relieves any exporter from compliance with the export application requirements of another Federal agency.

(2) This general license does not authorize:

(A) Any transactions or dealings with Banco de Desarrollo Economico y Social de Venezuela (BANDES) or Banco Bandes Uruguay S.A. (Bandes Uruguay);

(B) The unblocking of any property blocked pursuant to E.O. 13850, as amended by E.O. 13857, or any part of 31 CFR chapter V, except as authorized by paragraph (a); or

(C) Any transaction that is otherwise prohibited by E.O. 13850 of November 1, 2018, E.O. 13835 of May 21, 2018, E.O. 13827 of March 19, 2018, E.O.

13808 of August 24, 2017, E.O. 13692 of March 8, 2015, each as amended by E.O. 13857, or any part of 31 CFR chapter V, or any transactions or dealings with any blocked person other than the blocked persons identified in paragraph (a) of this general license.

(c) *Covered items*. For the purposes of this general license, agricultural commodities, medicine, and medical devices are defined below.

(1) *Agricultural commodities*. For the purposes of this general license, agricultural commodities are:

(i) Products that fall within the term “agricultural commodity” as defined in

section 102 of the Agricultural Trade Act of 1978 (7 U.S.C. 5602);

(ii) Food for humans (including raw, processed, and packaged foods; live animals; vitamins and minerals; food additives or supplements; and bottled drinking water) or animals (including animal feeds);

(iii) Seeds for food crops;

(iv) Fertilizers or organic fertilizers; or

(v) Reproductive materials (such as live animals, fertilized eggs, embryos, and semen) for the production of food animals.

(2) *Medicine*. For the purposes of this general license, medicine is an item that falls within the definition of the term “drug” in section 201 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 321).

(3) *Medical devices*. For the purposes of this general license, a medical device is an item that falls within the definition of “device” in section 201 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 321).

(d) Effective March 22, 2019, General License No. 4, dated August 25, 2017, is replaced and superseded in its entirety by this General License No. 4A.

Bradley T. Smith,

*Deputy Director, Office of Foreign Assets Control,*

Dated: March 22, 2019.

#### OFFICE OF FOREIGN ASSETS CONTROL

##### Executive Order 13808 of August 24, 2017

##### Imposing Additional Sanctions With Respect to the Situation in Venezuela

##### Executive Order 13850 of November 1, 2018

##### Blocking Property of Additional Persons Contributing to the Situation in Venezuela

#### GENERAL LICENSE 4B

Authorizing New Debt Transactions and Transactions Involving Certain Banks Related to the Exportation or Reexportation of Agricultural Commodities, Medicine, Medical Devices, or Replacement Parts and Components

(a) Except as provided in paragraph (b) of this general license, all transactions related to, the provision of financing for, and other dealings in new debt prohibited by Executive Order (E.O.) 13808, as amended by E.O. 13857 of January 25, 2019 (“Taking Additional Steps to Address the National Emergency With Respect to Venezuela”), and transactions involving Banco de Venezuela, S.A. Banco Universal (Banco de Venezuela), Banco Bicentenario del Pueblo, de la Clase

Obrera, Mujer y Comunas, Banco Universal C.A. (Banco Bicentenario del Pueblo), or Banco Central de Venezuela prohibited by E.O. 13850, as amended by E.O. 13857, are authorized, provided that they are ordinarily incident and necessary to:

(1) The exportation or reexportation, from the United States or by a U.S. person, wherever located, of agricultural commodities, medicine, medical devices, or replacement parts and components for medical devices to Venezuela, or to persons in third countries purchasing specifically for resale to Venezuela, and provided that the exportation or reexportation is licensed or otherwise authorized by the Department of Commerce under the provisions of the Export Administration Act of 1979, as amended (50 U.S.C. 4601–4623) or its successor, the Export Control Reform Act of 2018 (see the Export Administration Regulations, 15 CFR parts 730 through 774 (EAR)); or

(2) The exportation or reexportation of agricultural commodities, medicine, medical devices, or replacement parts and components for medical devices that are not subject to the EAR, to Venezuela, or to persons in third countries purchasing specifically for resale to Venezuela, and provided that the items to be exported or reexported are not listed under any multilateral export control regime.

(b) *Limitations.*

(1) Nothing in this general license relieves any exporter from compliance with the export application requirements of another Federal agency.

(2) This general license does not authorize:

(A) Any transactions or dealings with Banco de Desarrollo Economico y Social de Venezuela (BANDES) or Banco Bandes Uruguay S.A. (Bandes Uruguay);

(B) The unblocking of any property blocked pursuant to E.O. 13850, as amended by E.O. 13857, or any part of 31 CFR chapter V, except as authorized by paragraph (a); or

(C) Any transaction that is otherwise prohibited by E.O. 13850, E.O. 13835 of May 21, 2018, E.O. 13827 of March 19, 2018, E.O. 13808, E.O. 13692 of March 8, 2015, each as amended by E.O. 13857, or any part of 31 CFR chapter V, or any transactions or dealings with any blocked person other than the blocked persons identified in paragraph (a) of this general license.

(c) *Covered items.* For the purposes of this general license, agricultural commodities, medicine, and medical devices are defined below.

(1) *Agricultural commodities.* For the purposes of this general license, agricultural commodities are:

(i) Products that fall within the term “agricultural commodity” as defined in section 102 of the Agricultural Trade Act of 1978 (7 U.S.C. 5602);

(ii) Food for humans (including raw, processed, and packaged foods; live animals; vitamins and minerals; food additives or supplements; and bottled drinking water) or animals (including animal feeds);

(iii) Seeds for food crops;

(iv) Fertilizers or organic fertilizers; or

(v) Reproductive materials (such as live animals, fertilized eggs, embryos, and semen) for the production of food animals.

(2) *Medicine.* For the purposes of this general license, medicine is an item that falls within the definition of the term “drug” in section 201 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 321).

(3) *Medical devices.* For the purposes of this general license, a medical device is an item that falls within the definition of “device” in section 201 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 321).

(d) Effective April 17, 2019, General License No. 4A, dated March 22, 2019, is replaced and superseded in its entirety by this General License No. 4B.

Andrea Gacki,

*Director, Office of Foreign Assets Control.*

Dated: April 17, 2019.

**OFFICE OF FOREIGN ASSETS CONTROL**

**Executive Order 13808 of August 24, 2017**

**Imposing Additional Sanctions With Respect to the Situation in Venezuela**

**Executive Order 13850 of November 1, 2018**

**Blocking Property of Additional Persons Contributing to the Situation in Venezuela**

**Executive Order of August 5, 2019**

**Blocking Property of the Government of Venezuela**

**GENERAL LICENSE 4C**

**Authorizing Certain New Debt Transactions and Other Transactions Involving Certain Blocked Persons Related to the Exportation or Reexportation of Agricultural Commodities, Medicine, Medical Devices, Replacement Parts and Components, or Software Updates**

(a) Except as provided in paragraph (b) of this general license, the following transactions are authorized, provided that they are ordinarily incident and necessary to the exportation or reexportation of agricultural

commodities, medicine, medical devices, replacement parts and components for medical devices, or software updates for medical devices to Venezuela, or to persons in third countries purchasing specifically for resale to Venezuela:

(1) All transactions related to, the provision of financing for, and other dealings in new debt prohibited by Executive Order (E.O.) 13808, as amended by E.O. 13857 of January 25, 2019;

(2) All transactions prohibited by E.O. 13850, as amended by E.O. 13857, involving Banco de Venezuela, S.A. Banco Universal (Banco de Venezuela), Banco Bicentenario del Pueblo, de la Clase Obrera, Mujer y Comunas, Banco Universal C.A. (Banco Bicentenario del Pueblo), or Banco Central de Venezuela; and

(3) All transactions prohibited by E.O. of August 5, 2019 involving the Government of Venezuela.

**Note to paragraph (a)(3):** The authorization in paragraph (a)(3) of this general license authorizes transactions involving Government of Venezuela persons blocked solely pursuant to E.O. of August 5, 2019.

(b) This general license does not authorize:

(1) Any transactions or dealings with Banco de Desarrollo Economico y Social de Venezuela (BANDES) or Banco Bandes Uruguay S.A. (Bandes Uruguay);

(2) The unblocking of any property blocked pursuant to E.O. of August 5, 2019 or E.O. 13850, as amended, or any part of 31 CFR chapter V, except as authorized by paragraph (a); or

(3) Any transaction that is otherwise prohibited by E.O. of August 5, 2019, or E.O. 13850, E.O. 13835 of May 21, 2018, E.O. 13827 of March 19, 2018, E.O. 13808, or E.O. 13692 of March 8, 2015, each as amended by E.O. 13857, or any part of 31 CFR chapter V, or any transactions or dealings with any blocked person other than the transactions described in paragraphs (a)(2)–(3) of this general license.

(c) *Covered items.* For the purposes of this general license, agricultural commodities, medicine, and medical devices are defined below.

(1) *Agricultural commodities.* For the purposes of this general license, agricultural commodities are:

(i) Products that fall within the term “agricultural commodity” as defined in section 102 of the Agricultural Trade Act of 1978 (7 U.S.C. 5602);

(ii) Food for humans (including raw, processed, and packaged foods; live animals; vitamins and minerals; food additives or supplements; and bottled

drinking water) or animals (including animal feeds);

(iii) Seeds for food crops;

(iv) Fertilizers or organic fertilizers; or

(v) Reproductive materials (such as live animals, fertilized eggs, embryos, and semen) for the production of food animals.

(2) *Medicine*. For the purposes of this general license, medicine is an item that falls within the definition of the term “drug” in section 201 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 321).

(3) *Medical devices*. For the purposes of this general license, a medical device is an item that falls within the definition of “device” in section 201 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 321).

(d) Effective August 5, 2019, General License No. 4B, dated April 17, 2019, is replaced and superseded in its entirety by this General License No. 4C.

**Note to General License 4C:** Nothing in this general license relieves any exporter from compliance with the requirements of other Federal agencies, including the Department of Commerce’s Bureau of Industry and Security.

Andrea Gacki,

*Director, Office of Foreign Assets Control.*

Dated: August 5, 2019.

**Andrea M. Gacki,**

*Director, Office of Foreign Assets Control.*

[FR Doc. 2023-00347 Filed 1-10-23; 8:45 am]

**BILLING CODE 4810-AL-P**

## DEPARTMENT OF HOMELAND SECURITY

### Coast Guard

#### 33 CFR Part 147

[Docket No. USCG–2022–0549]

#### Safety Zones; Technical and Conforming Amendments

**AGENCY:** Coast Guard, Department of Homeland Security (DHS).

**ACTION:** Final rule.

**SUMMARY:** This final rule makes non-substantive technical and conforming amendments to a Code of Federal Regulations (CFR) part which will allow the Coast Guard to include safety zones for non-mineral energy resource facilities on the Outer Continental Shelf in that part. It reflects amendments to the Outer Continental Shelf Lands Act by the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021. This rule will have no substantive effect on the regulated

public. It enables us to properly place newly authorized safety zones in the same CFR part where other existing Outer Continental Shelf safety zone regulations are located.

**DATES:** This final rule is effective January 11, 2023.

**ADDRESSES:** To view documents mentioned in this preamble as being available in the docket, go to <https://www.regulations.gov>, type USCG–2022–0549 in the search box and click “Search.” Next, in the Document Type column, select “Supporting & Related Material.”

**FOR FURTHER INFORMATION CONTACT:** For information about this document call or email Alayna Ness, Coast Guard; telephone 202–372–3853, email [Alayna.R.Ness@uscg.mil](mailto:Alayna.R.Ness@uscg.mil).

#### SUPPLEMENTARY INFORMATION:

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#### I. Abbreviations

CFR Code of Federal Regulations  
 DHS Department of Homeland Security  
 NDAA National Defense Authorization Act  
 OCS Outer Continental Shelf  
 OMB Office of Management and Budget  
 § Section  
 U.S.C. United States Code

#### II. Regulatory History

We did not publish a notice of proposed rulemaking for this rule. Under Title 5 of the United States Code (U.S.C.), Section 553(b)(A), the Coast Guard finds that this final rule is exempt from notice and public comment rulemaking requirements because these changes involve rules of agency procedure or practice. In addition, the Coast Guard finds that notice and comment procedures are unnecessary for this final rule under 5 U.S.C. 553(b)(B), as this rule consists of only technical and editorial corrections and these changes will have no substantive effect on the public. Under 5 U.S.C. 553(d)(3), the Coast Guard finds that, for the same reasons, good cause

exists for making this final rule effective upon publication in the **Federal Register**.

#### III. Basis and Purpose

This final rule, which becomes effective on January 11, 2023, makes technical and conforming amendments to title 33, part 147, of the Code of Federal Regulations (CFR). These non-substantive changes are necessary to include safety zone regulations for non-mineral energy activities on the Outer Continental Shelf (OCS) in 33 CFR part 147. This rule does not create or change any substantive requirements.

This final rule is issued under the authority of 5 U.S.C. 552(a), 14 U.S.C. 102, and 43 U.S.C. 1333; DHS Delegation No. 00170.1(II)(90), Revision No. 01.3; and authorities listed at the end of this rule for the CFR part this rule amends.

#### IV. Discussion of the Rule

The Coast Guard is issuing technical and conforming amendments to the existing regulations in title 33, part 147, of the CFR. These technical amendments provide the public with accurate and current regulatory information as to where safety zones for certain OCS facilities will be located in the CFR, but do not change the effect of any Coast Guard regulations on the public. Our amendment to 33 CFR 147.10 is narrowly focused on allowing us to establish 33 CFR part 147 as the location for safety zones regulations for non-mineral energy resource OCS facilities.

On January 1, 2021, Congress enacted the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (NDAA), Public Law 116–283, 134 Stat. 3388. Section 9503 of the NDAA amended Section 4(a)(1) of the Outer Continental Shelf Lands Act (43 U.S.C. 1333(a)(1)) to specifically include non-mineral energy resources. The Coast Guard uses the affected statutory provisions as authority for issuing safety zone regulations around offshore facilities on the OCS. In § 147.10, this rule redesignates paragraphs (b) through (d) as paragraphs (c) through (e), makes a conforming amendment to an existing cross-reference in newly redesignated paragraph (c), and adds a new paragraph (b). New paragraph (b) explains that, for purposes of establishing safety zones under part 147, “OCS facility” includes non-mineral energy resource permanent or temporary structures. The rest of part 147 is unchanged by this technical amendment.

## V. Regulatory Analyses

We developed this rule after considering numerous statutes and Executive orders related to rulemaking. Below we summarize our analyses based on these statutes or Executive orders.

### A. Regulatory Planning and Review

Executive Orders 12866 (Regulatory Planning and Review) and 13563 (Improving Regulation and Regulatory Review) direct agencies to assess the costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility.

The Office of Management and Budget (OMB) has not designated this rule a significant regulatory action under section 3(f) of Executive Order 12866. Accordingly, OMB has not reviewed it. A regulatory analysis follows.

This rule involves non-substantive technical amendments and internal agency practices and procedures; it will not impose any additional costs and will provide qualitative benefits. The final rule will simply amend our regulations to reflect existing statutory authority under the 2021 NDAA to allow the Coast Guard to establish safety zones for non-mineral development on the OCS and to help identify where these safety zone regulations will be located in the CFR. The rule will also add clarifying text in 33 CFR part 147 in support of this change.

The Coast Guard does not expect that there will be any additional costs conferred on the public or the Federal Government, because none of the technical and editorial changes included in this rule will change existing regulatory requirements, and no safety zones on the OCS will be directly established, removed, or otherwise modified by this rule. The qualitative benefits of the non-substantive technical amendments are increased clarity of regulations that will now reflect recent amendments to 43 U.S.C. 1333. Hence, this rule will establish that safety zone regulations for non-mineral energy resources OCS facilities will be located in 33 CFR part 147.

### B. Small Entities

Under the Regulatory Flexibility Act, 5 U.S.C. 601–612, we have considered

whether this rule would have a significant economic impact on a substantial number of small entities. The term “small entities” comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

A notice of proposed rulemaking does not precede this rule. Therefore, it is exempt from the requirements of the Regulatory Flexibility Act (5 U.S.C. 601–612). The Regulatory Flexibility Act does not apply when notice and comment rulemaking is not required.

### C. Assistance for Small Entities

Under section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996, Public Law 104–121, we offer to assist small entities in understanding this rule so that they can better evaluate its effects on them and participate in the rulemaking. The Coast Guard will not retaliate against small entities that question or complain about this rule or any policy or action of the Coast Guard.

### D. Collection of Information

This rule will not call for a new collection of information under the Paperwork Reduction Act of 1995, 44 U.S.C. 3501–3520, nor does it impact an existing collection.

### E. Federalism

A rule has implications for federalism under Executive Order 13132 (Federalism) if it has a substantial direct effect on States, on the relationship between the National Government and the States, or on the distribution of power and responsibilities among the various levels of government. We have analyzed this rule under Executive Order 13132 and have determined that it is consistent with the fundamental federalism principles and preemption requirements described in Executive Order 13132.

### F. Unfunded Mandates

The Unfunded Mandates Reform Act of 1995, 2 U.S.C. 1531–1538, requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of \$100,000,000 (adjusted for inflation) or more in any one year. Although this rule will not result in such expenditure, we do discuss the effects of this rule elsewhere in this preamble.

### G. Taking of Private Property

This rule will not cause a taking of private property or otherwise have taking implications under Executive Order 12630 (Governmental Actions and Interference with Constitutionally Protected Property Rights).

### H. Civil Justice Reform

This rule meets applicable standards in sections 3(a) and 3(b)(2) of Executive Order 12988 (Civil Justice Reform) to minimize litigation, eliminate ambiguity, and reduce burden.

### I. Protection of Children

We have analyzed this rule under Executive Order 13045 (Protection of Children from Environmental Health Risks and Safety Risks). This rule is not an economically significant rule and will not create an environmental risk to health or risk to safety that might disproportionately affect children.

### J. Indian Tribal Governments

This rule does not have tribal implications under Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), because it will not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

### K. Energy Effects

We have analyzed this rule under Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use). We have determined that it is not a “significant energy action” under that order because it is not a “significant regulatory action” under Executive Order 12866 and is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

### L. Technical Standards

The National Technology Transfer and Advancement Act, codified as a note to 15 U.S.C. 272, directs agencies to use voluntary consensus standards in their regulatory activities unless the agency provides Congress, through OMB, with an explanation of why using these standards would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., specifications of materials, performance, design, or operation; test methods; sampling procedures; and related management systems practices) that are

developed or adopted by voluntary consensus standards bodies.

This rule does not use technical standards. Therefore, we did not consider the use of voluntary consensus standards.

#### M. Environment

We have analyzed this rule under DHS Management Directive 023–01, Rev. 1, associated implementing instructions, and Environmental Planning COMDTINST 5090.1 (series), which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (42 U.S.C. 4321–4370f), and have made a determination that this action is one of a category of actions that do not individually or cumulatively have a significant effect on the human environment. A Record of Environmental Consideration supporting this determination is available in the docket. For instructions on locating the docket, see the **ADDRESSES** section of this preamble.

This rule is categorically excluded under paragraphs A3 and L54 of Appendix A, Table 1 of DHS Instruction Manual 023–01–001–01, Rev. 1. Paragraph A3 pertains to the promulgation of rules, issuance of rulings or interpretations, and the development and publication of policies, orders, directives, notices, procedures, manuals, advisory circulars, and other guidance documents of the following nature:

- (a) Those of a strictly administrative or procedural nature;
- (b) those that implement, without substantive change, statutory or regulatory requirements;
- (c) those that implement, without substantive change, procedures, manuals, and other guidance documents; and
- (d) those that interpret or amend an existing regulation without changing its environmental effect.

Paragraph L54 pertains to regulations which are editorial or procedural. This final rule involves a non-substantive technical and conforming amendment to existing Coast Guard regulations.

#### List of Subjects in 33 CFR Part 147

Continental shelf, Marine safety, Navigation (water).

For the reasons discussed in the preamble, the Coast Guard amends 33 CFR part 147 as follows:

#### PART 147—SAFETY ZONES

- 1. The authority citation for part 147 is revised to read as follows:

**Authority:** 14 U.S.C. 544; 43 U.S.C. 1333; 33 CFR 1.05–1; Department of Homeland Security Delegation No. 00170.1, Revision No. 01.3.

- 2. Amend § 147.10 as follows:
  - a. Redesignate paragraphs (b) through (d) as paragraphs (c) through (e);
  - b. Add new paragraph (b); and
  - c. In newly redesignated paragraph (c), remove the text “paragraph (c)” and add, in its place, the text “paragraph (d)”.

The addition reads as follows:

#### § 147.10 Establishment of safety zones.

\* \* \* \* \*

(b) For purposes of establishing safety zones under this part, OCS facility includes non-mineral energy resource permanent or temporary structures.

\* \* \* \* \*

Dated: January 4, 2023.

**Michael Cunningham,**  
Chief, Office of Regulations and  
Administrative Law.

[FR Doc. 2023–00319 Filed 1–10–23; 8:45 am]

**BILLING CODE 9110–04–P**

## POSTAL SERVICE

### 39 CFR Parts 233 and 273

#### Inspection Service Authority; Civil Monetary Penalty Inflation Adjustment

**AGENCY:** Postal Service™.

**ACTION:** Interim final rule.

**SUMMARY:** This document updates postal regulations by implementing inflation adjustments to civil monetary penalties that may be imposed under consumer protection and mailability provisions enforced by the Postal Service pursuant to the Deceptive Mail Prevention and Enforcement Act and the Postal Accountability and Enhancement Act, as well as the civil monetary penalty that may be imposed by the Postal Service for false claims and statements under the Program Fraud Civil Remedies Act. These adjustments are required under the Federal Civil Penalties Inflation Adjustment Act of 1990, as amended by the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015. This document includes the adjustments for 2023 for the statutory civil monetary penalties subject to the 2015 Act and all necessary updates authorized by the 2015 Act for regulatory civil monetary penalties.

**DATES:** Effective January 11, 2023.

**FOR FURTHER INFORMATION CONTACT:** Louis DiRienzo, (202) 268–2705, [ljdirienzo@uspis.gov](mailto:ljdirienzo@uspis.gov).

**SUPPLEMENTARY INFORMATION:** The Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (2015 Act), Public Law 114–74, 129 Stat. 584, amended the Federal Civil Penalties Inflation Adjustment Act of 1990 (1990 Act), Public Law 101–410, 104 Stat. 890 (28 U.S.C. 2461 note), to improve the effectiveness of civil monetary penalties and to maintain their deterrent effect. Section 3 of the 1990 Act specifically includes the Postal Service in the definition of “agency” subject to its provisions.

Beginning in 2017, the 2015 Act requires the Postal Service to make an annual adjustment for inflation to civil penalties that meet the definition of “civil monetary penalty” under the 1990 Act. The Postal Service must make the annual adjustment for inflation and publish the adjustment in the **Federal Register** by January 15 of each year. The Postal Service has not completed the annual adjustments for the civil monetary penalty that may be imposed under the Program Fraud Civil Remedies Act. In order to satisfy the annual adjustment requirement, the Postal Service is making all annual adjustments at this time. Each penalty will be adjusted as instructed by the Office of Management and Budget (OMB) based on the Consumer Price Index (CPI–U) from the most recent October. OMB has furnished detailed instructions regarding the annual adjustment for 2023 in memorandum M–23–05, *Implementation of Penalty Inflation Adjustments for 2023, Pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015* (December 15, 2022), <https://www.whitehouse.gov/wp-content/uploads/2022/12/M-23-05-CMP-CMP-Guidance.pdf>. This year, OMB has advised that an adjustment multiplier of 1.07745 will be used. The new penalty amount must be rounded to the nearest dollar.

The 2015 Act allows the interim final rule and annual inflation adjustments to be published without prior public notice or opportunity for public comment.

#### Adjustments to Postal Service Civil Monetary Penalties

Civil monetary penalties may be assessed for postal offenses under sections 106 and 108 of the Deceptive Mail Prevention and Enforcement Act, Public Law 106–168, 113 Stat. 1811, 1814 (*see*, 39 U.S.C. 3012(a), (c)(1), (d), and 3017 (g)(2), (h)(1)(A)); and section 1008 of the Postal Accountability and Enhancement Act, Public Law 109–435, 120 Stat. 3259–3261 (*see*, 39 U.S.C. 3018 (c)(1)(A)). The statutory civil monetary



penalties subject to the 2015 Act and the amount of each penalty after implementation of the annual adjustment for inflation are as follows:

*39 U.S.C. 3012(a)—False Representations and Lottery Orders*

Under 39 U.S.C. 3005(a)(1)–(3), the Postal Service may issue administrative orders prohibiting persons from using the mail to obtain money through false representations or lotteries. Persons who evade, attempt to evade, or fail to comply with an order to stop such prohibited practices may be liable to the United States for a civil penalty under 39 U.S.C. 3012(a). The regulations implemented pursuant to this section currently impose a \$79,481 penalty for each mailing less than 50,000 pieces, \$158,958 for each mailing of 50,000 to 100,000 pieces, and \$15,897 for each additional 10,000 pieces above 100,000 not to exceed \$3,179,178. The new penalties will be as follows: a \$85,637 penalty for each mailing less than 50,000 pieces, \$171,269 for each mailing of 50,000 to 100,000 pieces, and \$17,128 for each additional 10,000 pieces above 100,000 not to exceed \$3,425,405.

*39 U.S.C. 3012(c)(1)—False Representation and Lottery Penalties in Lieu of or as Part of an Order*

In lieu of or as part of an order issued under 39 U.S.C. 3005(a)(1)–(3), the Postal Service may assess a civil penalty. Currently, the amount of this penalty, set in the implementing regulations to 39 U.S.C. 3012(c)(1), is \$39,740 for each mailing that is less than 50,000 pieces, \$79,481 for each mailing of 50,000 to 100,000 pieces, and an additional \$7,948 for each additional 10,000 pieces above 100,000 not to exceed \$1,589,589. The new penalties will be \$42,818 for each mailing that is less than 50,000 pieces, \$85,637 for each mailing of 50,000 to 100,000 pieces, and an additional \$8,564 for each additional 10,000 pieces above 100,000 not to exceed \$1,712,703.

*39 U.S.C. 3012(d)—Misleading References to the United States Government; Sweepstakes and Deceptive Mailings*

Persons may be liable to the United States for a civil penalty under 39 U.S.C. 3012(d) for sending certain deceptive mail matter described in 39 U.S.C. 3001(h)–(k), including:

- Solicitations making false claims of Federal Government connection or approval;
- Certain solicitations for the purchase of a product or service that may be obtained without cost from the Federal Government;

- Solicitations containing improperly prepared “facsimile checks”; and
- Certain solicitations for “skill contests” and “sweepstakes” sent to individuals who, in accordance with 39 U.S.C. 3017(d), have requested that such materials not be mailed to them.

Currently, under the implementing regulations, this penalty is not to exceed \$15,897 for each mailing. The new penalty will be \$17,128.

*39 U.S.C. 3017(g)(2)—Commercial Use of Lists of Persons Electing Not To Receive Skill Contest or Sweepstakes Mailings*

Under 39 U.S.C. 3017(g)(2), the Postal Service may impose a civil penalty against a person who provides information for commercial use about individuals who, in accordance with 39 U.S.C. 3017(d), have elected not to receive certain sweepstakes and contest information. Currently, this civil penalty may not exceed \$3,179,178 per violation, pursuant to the implementing regulations. The new penalty may not exceed \$3,425,405 per violation.

*39 U.S.C. 3017(h)(1)(A)—Reckless Mailing of Skill Contest or Sweepstakes Matter*

Currently, under 39 U.S.C. 3017(h)(1)(A) and its implementing regulations, any promoter who recklessly mails nonmailable skill contest or sweepstakes matter may be liable to the United States in the amount of \$15,897 per violation for each mailing to an individual. The new penalty is \$17,128 per violation.

*39 U.S.C. 3018(c)(1)(A)—Hazardous Material*

Under 39 U.S.C. 3018(c)(1)(A), the Postal Service may impose a civil penalty payable into the Treasury of the United States on a person who knowingly mails nonmailable hazardous materials or fails to follow postal laws on mailing hazardous materials. Currently, this civil penalty is at least \$344, but not more than \$137,060 for each violation, pursuant to the implementing regulations. The new penalty is at least \$371, but not more than \$147,675 for each violation.

**Adjustments to Regulatory Postal Service Civil Monetary Penalties**

In October 1986, Congress enacted the Program Fraud Civil Remedies Act, 31 U.S.C. 3801–3812. The Program Fraud Civil Remedies Act established an administrative remedy against any person who makes, or causes to be made, a false claim or written statement to certain Federal agencies. The Act requires each covered agency to

promulgate rules and regulations necessary to implement its provisions. The Postal Service’s implementing regulations are found in part 273 of title 39, Code of Federal Regulations. The current penalty amount is \$12,537. The new penalty amount is \$13,508.

**List of Subjects**

*39 CFR Part 233*

Administrative practice and procedure, Banks, Banking, Credit, Crime, Infants and children, Law enforcement, Penalties, Privacy, Seizures and forfeitures.

*39 CFR Part 273*

Administrative practice and procedure, Claims, Fraud, Penalties.

For the reasons set out in the preamble, the Postal Service amends 39 CFR parts 233 and 273 as follows:

**PART 233—INSPECTION SERVICE AUTHORITY**

- 1. The authority citation for part 233 continues to read as follows:

**Authority:** 39 U.S.C. 101, 102, 202, 204, 401, 402, 403, 404, 406, 410, 411, 1003, 3005(e)(1), 3012, 3017, 3018; 12 U.S.C. 3401–3422; 18 U.S.C. 981, 983, 1956, 1957, 2254, 3061; 21 U.S.C. 881; Pub. L. 101–410, 104 Stat. 890 (28 U.S.C. 2461 note); Pub. L. 104–208, 110 Stat. 3009; Secs. 106 and 108, Pub. L. 106–168, 113 Stat. 1806 (39 U.S.C. 3012, 3017); Pub. L. 114–74, 129 Stat. 584.

**§ 233.12 [Amended]**

- 2. In § 233.12:

- a. In paragraph (a), remove “\$79,481” and add in its place “\$85,637”, remove “\$158,958” and add in its place “\$171,269”, remove “\$15,897” and add in its place “\$17,128”, and remove “\$3,179,178” and add in its place “\$3,425,405”;

- b. In paragraph (b), remove “\$39,740” and add in its place “\$42,818”, remove “\$79,481” and add in its place “\$85,637”, remove “\$7,948” and add in its place “\$8,564”, and remove “\$1,589,589” and add in its place “\$1,712,703”;

- c. In paragraph (c)(4), remove “\$15,897” and add in its place “\$17,128”;

- d. In paragraph (d), remove “\$3,179,178” and add in its place “\$3,425,405”;

- e. In paragraph (e), remove “\$15,897” and add in its place “\$17,128”; and

- f. In paragraph (f), remove “\$344” and add in its place “\$371” and remove “\$137,060” and add in its place “\$147,675”.

## PART 273—ADMINISTRATION OF PROGRAM FRAUD CIVIL REMEDIES ACT

■ 3. The authority citation for part 273 continues to read as follows:

**Authority:** 31 U.S.C. Chapter 38; 39 U.S.C. 401.

■ 4. In § 273.3, in paragraph (a)(1)(iv), add a sentence to the end of the paragraph to read as follows:

### § 273.3 Liability for false claims and statements.

\* \* \* \* \*

(a) \* \* \*

(1) \* \* \*

(iv) \* \* \* As adjusted under Public Law 114–74, the penalty is \$13,508 per claim.

\* \* \* \* \*

**Tram Pham,**

*Attorney, Ethics & Legal Compliance.*

[FR Doc. 2023–00322 Filed 1–10–23; 8:45 am]

**BILLING CODE 7710–12–P**

## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Parts 52 and 81

[EPA–R09–OAR–2022–0745; FRL–10211–02–R9]

### Determination of Attainment by the Attainment Date, Clean Data Determination, and Approval of Base Year Emissions Inventory for the Imperial County, California Nonattainment Area for the 2012 Annual Fine Particulate Matter NAAQS

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is determining that the Imperial County, California fine particulate matter (PM<sub>2.5</sub>) nonattainment area (“Imperial PM<sub>2.5</sub> nonattainment area”) attained the 2012 annual PM<sub>2.5</sub> national ambient air quality standards (NAAQS or “standard”) by its December 31, 2021 “Moderate” area attainment date. This determination is based upon ambient air quality monitoring data from 2019 through 2021. We are also making a clean data determination (CDD) based on our determination that preliminary air quality monitoring data from 2022 indicate the Imperial PM<sub>2.5</sub> nonattainment area continues to attain the 2012 annual PM<sub>2.5</sub> NAAQS. As a result of this CDD, certain Clean Air Act (CAA) requirements that apply to the Imperial County Air Pollution Control District (ICAPCD or “District”) are

suspended for so long as the area continues to meet the 2012 annual PM<sub>2.5</sub> NAAQS. The area remains nonattainment for the 2012 annual PM<sub>2.5</sub> NAAQS until the area is redesignated to attainment. The EPA is also approving a revision to California’s state implementation plan (SIP) consisting of the 2012 base year emissions inventory for the Imperial PM<sub>2.5</sub> nonattainment area, submitted by the California Air Resources Board (CARB or “State”) on July 18, 2018.

**DATES:** This rule is effective February 10, 2023.

**ADDRESSES:** The EPA has established a docket for this action under Docket ID No. EPA–R09–OAR–2022–0745. All documents in the docket are listed on the <https://www.regulations.gov> website. Although listed in the index, some information is not publicly available, e.g., Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available through <https://www.regulations.gov>, or please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section for additional availability information.

**FOR FURTHER INFORMATION CONTACT:** Ginger Vagenas, Air Planning Office (AIR–2), EPA Region IX, 75 Hawthorne Street, San Francisco, CA 94105, (415) 972–3964, or by email at [vagenas.ginger@epa.gov](mailto:vagenas.ginger@epa.gov).

**SUPPLEMENTARY INFORMATION:** Throughout this document, “we,” “us,” and “our” refer to the EPA.

### Table of Contents

- I. Summary of the Proposed Action
- II. Public Comment
- III. Final Action
- IV. Statutory and Executive Order Reviews

#### I. Summary of the Proposed Action

For the reasons discussed in the proposed rulemaking, the EPA proposed to determine that the Imperial PM<sub>2.5</sub> nonattainment area attained the 2012 annual PM<sub>2.5</sub> NAAQS by its December 31, 2021 attainment date. We explained that, if finalized, this action would fulfill the EPA’s statutory obligation to determine whether the Imperial PM<sub>2.5</sub> nonattainment area attained the NAAQS by the attainment date.

As provided in 40 CFR 51.1015, we also proposed a CDD. We noted that if the EPA finalized the proposal, the requirements for this area to submit an attainment demonstration, associated

reasonably available control measures (RACM), reasonable further progress (RFP) plan, contingency measures, and any other SIP revisions related to the attainment of the 2012 annual PM<sub>2.5</sub> NAAQS, would be suspended so long as the Imperial PM<sub>2.5</sub> nonattainment area continues to meet the standard. We also explained that a CDD does not constitute a redesignation to attainment, and that the Imperial PM<sub>2.5</sub> nonattainment area will remain designated nonattainment for the 2012 annual PM<sub>2.5</sub> NAAQS until such time as the EPA determines, pursuant to sections 107 and 175A of the CAA, that the Imperial PM<sub>2.5</sub> nonattainment area meets the CAA requirements for redesignation to attainment, including an approved maintenance plan showing that the area will continue to meet the standard for 10 years.

Finally, we proposed to approve the 2012 base year emissions inventory submitted by the State on July 18, 2018, as part of the “Imperial County 2018 Annual Particulate Matter Less Than 2.5 Microns In Diameter State Implementation Plan,” (“Imperial PM<sub>2.5</sub> Plan”), as meeting the requirements of CAA section 172(c)(3). As authorized in section 110(k)(3) of the Act, the EPA proposed to approve the submitted base year emissions inventory because we believe it fulfills all relevant requirements.

As described in Section I.B of the proposal, the EPA’s May 7, 2018 finding of failure to submit triggered an obligation for the EPA to issue a federal implementation plan (FIP). The District and CARB ultimately fulfilled their obligation to submit a plan, but because the EPA has not issued a final approval of the Imperial PM<sub>2.5</sub> Plan and because the nonattainment plan requirements continued to apply, our obligation to promulgate a FIP remained in place. We noted that if we finalized the proposed CDD, the District’s and State’s nonattainment planning obligations, except the requirement for a base year emissions inventory and new source review, would be suspended.<sup>1</sup> If, in addition to making a CDD, we were to finalize our proposed approval of the base year emissions inventory, the EPA’s FIP obligation would be suspended until such time as the CDD is rescinded.<sup>2</sup>

Please see our proposed rulemaking for more information concerning the background for this action and for a

<sup>1</sup> See Section I.D. of the proposed rulemaking.

<sup>2</sup> On August 26, 2019, the EPA approved ICAPCD’s amended Rule 207, “New and Modified Stationary Source Review” as meeting applicable CAA requirements for New Source Review. 84 FR 44545.

more detailed discussion of the rationale for these actions.

## II. Public Comment

The public comment period on the proposed rulemaking opened on September 20, 2022, the date of its publication in the **Federal Register**, and closed on November 21, 2022. We received one non-germane public comment, which is posted in the docket for this action.

## III. Final Action

For the reasons discussed in detail in the proposed rulemaking and summarized herein, the EPA is taking final action under CAA sections 179(c)(1) and 188(b)(2) to determine that the Imperial PM<sub>2.5</sub> nonattainment area attained the 2012 annual PM<sub>2.5</sub> NAAQS by its December 31, 2021 attainment date. This action fulfills the EPA's statutory obligation under CAA sections 179(c)(1) and 188(b)(2) to determine whether the Imperial PM<sub>2.5</sub> nonattainment area attained the NAAQS by the attainment date.

Preliminary data available in EPA's Air Quality System (AQS) for 2022 (January through June) indicate that the area continues to show concentrations consistent with attainment of the 2012 annual PM<sub>2.5</sub> standard; therefore, as provided in 40 CFR 51.1015, we are also finalizing our CDD.<sup>3</sup> Consequently, the requirements for this area to submit an attainment demonstration, associated RACM, RFP plan, contingency measures, and any other SIP revisions related to the attainment of the 2012 annual PM<sub>2.5</sub> NAAQS, will be suspended so long as this area continues to meet the standard. This CDD does not constitute a redesignation to attainment. The Imperial PM<sub>2.5</sub> nonattainment area will remain designated nonattainment for the 2012 annual PM<sub>2.5</sub> NAAQS until such time as the EPA determines, pursuant to sections 107 and 175A of the CAA, that the Imperial PM<sub>2.5</sub> nonattainment area meets the CAA requirements for redesignation to attainment, including an approved maintenance plan showing that the area will continue to meet the standard for 10 years.

We are also approving the Imperial PM<sub>2.5</sub> Plan's 2012 base year emissions inventory as meeting the requirements of CAA section 172(c)(3). As authorized in section 110(k)(3) of the Act, the EPA is approving the submitted base year emissions inventory based on our

determination that it fulfills all relevant requirements.

As described in Section I.B of proposed rulemaking, the EPA's May 7, 2018 finding of failure to submit triggered an obligation for the EPA to issue a FIP. The District and CARB ultimately fulfilled their obligation to submit a plan, but because the EPA had not issued a final approval of the Imperial PM<sub>2.5</sub> Plan and because the nonattainment plan requirements continued to apply, our obligation to promulgate a FIP remained in place. As a result of this CDD, the District's and State's nonattainment planning obligations, except the requirement for a base year emissions inventory and new source review, are suspended.<sup>4</sup> In addition, as a result of our approval of the base year emissions inventory and our previous new source review approval, the EPA's FIP obligation will be suspended until such time as the EPA determines that the area has reviolated the PM<sub>2.5</sub> NAAQS and rescinds the CDD.

## IV. Statutory and Executive Order Reviews

### A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget (OMB) for review.

### B. Paperwork Reduction Act (PRA)

This rule does not impose any new information collection burden under the PRA not already approved by the Office of Management and Budget. This action finds that the Imperial PM<sub>2.5</sub> nonattainment area attained the 2012 PM<sub>2.5</sub> NAAQS by the applicable attainment date, determines the area has clean data, and approves the base year emissions inventory. Thus, this action does not establish any new information collection burden that has not already been identified and approved in the EPA's information collection request.

### C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action will not impose any requirements on small entities. The approval of the emissions inventory, the determination that the Imperial PM<sub>2.5</sub> nonattainment area attained by its attainment date, and the CDD for the 2012 PM<sub>2.5</sub> NAAQS does not in and of itself create any new

requirements beyond what is mandated by the CAA. Instead, this rulemaking only makes factual determinations, and does not directly regulate any entities.

### D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. This action imposes no enforceable duty on any state, local or tribal governments or the private sector.

### E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states and tribes, or on the distribution of power and responsibilities among the various levels of government. The division of responsibility between the Federal Government and the states for the purposes of implementing the NAAQS is established under the CAA.

### F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action does not have tribal implications. It will neither impose substantial direct compliance costs on federally recognized tribal governments, nor preempt tribal law. There are no tribes affected by this action.

### G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of "covered regulatory action" in section 2–202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not concern an environmental health risk or safety risk.

### H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

### I. National Technology Transfer Advancement Act (NTTAA)

This rulemaking does not involve technical standards.

<sup>3</sup> AQS Design Value Report (AMP480), dated December 6, 2022 (User ID: STSAI Report Request ID: 2061805).

<sup>4</sup> See Section I.D. of the proposed rulemaking.

*J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations*

Executive Order (E.O.) 12898 (59 FR 7629 (Feb. 16, 1994)) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States. The EPA's evaluation of this issue is contained in the section of the preamble to the proposed rule titled "Environmental Justice Considerations."

*K. Congressional Review Act (CRA)*

This rule is exempt from the CRA because it is a rule of particular applicability. The rule makes factual determinations for specific entities and does not directly regulate any entities. The determination of attainment, clean data determination, and emission inventory approval do not in themselves create any new requirements beyond what is mandated by the CAA.

*L. Judicial Review*

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by March 13, 2023. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

**List of Subjects**

*40 CFR Part 52*

Environmental protection, Air pollution control, Incorporation by reference, Nitrogen dioxide, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Volatile organic compounds.

*40 CFR Part 81*

Environmental protection, Administrative practice and procedure, Air pollution control, Designations and classifications, Intergovernmental

relations, Nitrogen oxides, Particulate matter, Reporting and recordkeeping requirements, and Volatile organic compounds.

**Authority:** 42 U.S.C. 7401 *et seq.*

Dated: December 21, 2022.

**Martha Guzman Aceves,**  
*Regional Administrator, Region IX.*

Part 52, chapter I, title 40 of the Code of Federal Regulations is amended as follows:

**PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS**

■ 1. The authority citation for part 52 continues to read as follows:

**Authority:** 42 U.S.C. 7401 *et seq.*

**Subpart F—California**

■ 2. Section 52.220 is amended by adding paragraph (c)(593) to read as follows:

**§ 52.220 Identification of plan—in part.**

\* \* \* \* \*

(c) \* \* \*

(593) The following plan was submitted on July 18, 2018, by the Governor's designee, as an attachment to a letter dated July 16, 2018.

(i) [Reserved]

(ii) *Additional materials.* (A) Imperial County Air Pollution Control District.

(1) "Imperial County 2018 Annual Particulate Matter Less Than 2.5 Microns In Diameter State Implementation Plan," adopted April 24, 2018, Chapter 3 ("Emissions Inventory") excluding: Table 3–9a ("Direct PM<sub>2.5</sub> and PM<sub>2.5</sub> Precursor Emissions by Major Source Category in the Imperial County PM<sub>2.5</sub> Nonattainment Area, 2019 (Annual)"); Table 3–9b ("Condensable and Filterable PM<sub>2.5</sub> Emissions by Major Source Category in the Imperial County PM<sub>2.5</sub> Nonattainment Area, 2019 (Annual)"); Table 3–10a ("Direct PM<sub>2.5</sub> and PM<sub>2.5</sub> Precursor Emissions by Major Source Category in the Imperial County PM<sub>2.5</sub> Nonattainment Area, 2021 (Annual)"); Table 3–10b ("Condensable and Filterable PM<sub>2.5</sub> Emissions by Major Source Category in the Imperial County PM<sub>2.5</sub> Nonattainment Area, 2021 (Annual)"); Table 3–11a ("Direct PM<sub>2.5</sub> and PM<sub>2.5</sub> Precursor Emissions by Major Source Category in the Imperial County PM<sub>2.5</sub> Nonattainment Area, 2022 (Annual)"); Table 3–11b ("Condensable and Filterable PM<sub>2.5</sub> Emissions by Major Source Category in the Imperial County PM<sub>2.5</sub> Nonattainment Area, 2022 (Annual)"); and Section 3.17 ("Evaluation of Significant Precursors").

(2) [Reserved]

(B) [Reserved]

■ 3. Section 52.247 is amended by adding paragraph (q) to read as follows:

**§ 52.247 Control strategy and regulations: Fine Particle Matter.**

\* \* \* \* \*

(q) *Determination of attainment.*

Effective February 10, 2023, the EPA has determined that, based on 2019 to 2021 ambient air quality data, the Imperial County PM<sub>2.5</sub> nonattainment area has attained the 2012 annual PM<sub>2.5</sub> NAAQS. Under the provisions of the EPA's PM<sub>2.5</sub> implementation rule (see 40 CFR 51.1015), this determination suspends the requirements for this area to submit an attainment demonstration, associated reasonably available control measures, a reasonable further progress plan, contingency measures, and other planning SIPs related to attainment for as long as this area continues to attain the 2012 annual PM<sub>2.5</sub> NAAQS. If the EPA determines, after notice-and-comment rulemaking, that this area no longer meets the 2012 annual PM<sub>2.5</sub> NAAQS, the corresponding determination of attainment for that area shall be withdrawn.

[FR Doc. 2022–28278 Filed 1–10–23; 8:45 am]

**BILLING CODE 6560–50–P**

**FEDERAL MARITIME COMMISSION**

**46 CFR Part 506**

[Docket No. 22–77]

RIN 3072–AC94

**Inflation Adjustment of Civil Monetary Penalties**

**AGENCY:** Federal Maritime Commission.  
**ACTION:** Final rule.

**SUMMARY:** The Federal Maritime Commission (Commission) is publishing this final rule to adjust for inflation the civil monetary penalties assessed or enforced by the Commission, pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (2015 Act). The 2015 Act requires that agencies adjust and publish their new civil penalties by January 15 each year.

**DATES:** This rule is effective January 15, 2023.

**FOR FURTHER INFORMATION CONTACT:** William Cody, Secretary; Phone: (202) 523–5725; Email: [secretary@fmc.gov](mailto:secretary@fmc.gov).

**SUPPLEMENTARY INFORMATION:** This rule adjusts the civil monetary penalties assessable by the Commission in accordance with the 2015 Act, which

became effective on November 2, 2015. Public Law 114–74, section 701. The 2015 Act further amended the Federal Civil Penalties Inflation Adjustment Act of 1990 (FCPIAA), Public Law 101–410, 104 Stat. 890 (codified as amended at 28 U.S.C. 2461 note), in order to improve the effectiveness of civil monetary penalties and to maintain their deterrent effect.

The 2015 Act requires agencies to adjust civil monetary penalties under their jurisdiction by January 15 each year, based on changes in the consumer price index (CPI–U) for the month of October in the previous calendar year. On December 15, 2022, the Office of Management and Budget published guidance stating that the CPI–U multiplier for October 2022 is 1.07745.<sup>1</sup> In order to complete the annual adjustment, the Commission must multiply the most recent civil penalty amounts in 46 CFR part 506 by the multiplier, 1.07745.

**Rulemaking Analyses and Notices**

*Notice and Effective Date*

Adjustments under the FCPIAA, as amended by the 2015 Act, are not subject to the procedural rulemaking requirements of the Administrative Procedure Act (APA) (5 U.S.C. 553), including the requirements for prior notice, an opportunity for comment, and a delay between the issuance of a final rule and its effective date.<sup>2</sup> As noted above, the 2015 Act requires that the Commission adjust its civil monetary penalties no later than January 15 of each year.

*Congressional Review Act*

The rule is not a “major rule” as defined by the Congressional Review

Act, codified at 5 U.S.C. 801 *et seq.* The rule will not result in: (1) an annual effect on the economy of \$100,000,000 or more; (2) a major increase in costs or prices; or (3) significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of United States-based companies to compete with foreign-based companies. 5 U.S.C. 804(2).

*Regulatory Flexibility Act*

The Regulatory Flexibility Act (codified as amended at 5 U.S.C. 601–612) provides that whenever an agency promulgates a final rule after being required to publish a notice of proposed rulemaking under the APA (5 U.S.C. 553), the agency must prepare and make available a final regulatory flexibility analysis describing the impact of the rule on small entities or the head of the agency must certify that the rule will not have a significant economic impact on a substantial number of small entities. 5 U.S.C. 604–605. As indicated above, this final rule is not subject to the APA’s notice and comment requirements, and the Commission is not required to either conduct a regulatory flexibility analysis or certify that the final rule would not have a significant economic impact on a substantial number of small entities.

*Paperwork Reduction Act*

The Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3521) requires an agency to seek and receive approval from the Office of Management and Budget (OMB) before collecting information from the public. 44 U.S.C. 3507. The agency must submit collections of information in rules to OMB in conjunction with the publication of the notice of proposed

rulemaking. 5 CFR 1320.11. This final rule does not contain any collection of information, as defined by 44 U.S.C. 3502(3) and 5 CFR 1320.3(c).

*Regulation Identifier Number*

The Commission assigns a regulation identifier number (RIN) to each regulatory action listed in the Unified Agenda of Federal Regulatory and Deregulatory Actions (Unified Agenda). The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The public may use the RIN contained in the heading at the beginning of this document to find this action in the Unified Agenda, available at <https://www.reginfo.gov/public/do/eAgendaMain>.

**List of Subjects in 46 CFR Part 506**

Administrative practice and procedure, Claims, Penalties.

For the reasons stated in the preamble, 46 CFR part 506 is amended as follows:

**PART 506—CIVIL MONETARY PENALTY INFLATION ADJUSTMENT**

■ 1. The authority citation for part 506 continues to read as follows:

*Authority:* 28 U.S.C. 2461.

■ 2. Amend § 506.4 by revising paragraph (d) to read as follows:

**§ 506.4 Cost of living adjustments of civil monetary penalties.**

\* \* \* \* \*

(d) *Inflation adjustment.* Maximum civil monetary penalties within the jurisdiction of the Federal Maritime Commission are adjusted for inflation as follows:

TABLE 1 TO PARAGRAPH (d)

United States Code citation	Civil monetary penalty description	Maximum penalty as of January 15, 2022	Maximum penalty as of January 15, 2023
46 U.S.C. 42304 .....	Adverse impact on U.S. carriers by foreign shipping practices .....	\$2,301,065	\$2,479,282
46 U.S.C. 41107(a) .....	Knowing and Willful violation/Shipping Act of 1984, or Commission regulation or order.	65,666	70,752
46 U.S.C. 41107(a) .....	Violation of Shipping Act of 1984, Commission regulation or order, not knowing and willful.	13,132	14,149
46 U.S.C. 41108(b) .....	Operating in foreign commerce after tariff suspension .....	131,334	141,506
46 U.S.C. 42104 .....	Failure to provide required reports, etc./Merchant Marine Act of 1920 ....	10,360	11,162
46 U.S.C. 42106 .....	Adverse shipping conditions/Merchant Marine Act of 1920 .....	2,071,819	2,232,281
46 U.S.C. 42108 .....	Operating after tariff or service contract suspension/Merchant Marine Act of 1920.	103,591	111,614
46 U.S.C. 44102, 44104 ..	Failure to establish financial responsibility for non-performance of transportation.	26,167	28,194
46 U.S.C. 44103, 44104 ..	Failure to establish financial responsibility for death or injury .....	873	941
		26,167	28,194
		873	941

<sup>1</sup> Office of Management and Budget, M–23–05, Implementation of Penalty Inflation Adjustments for 2023, Pursuant to the Federal Civil Penalties

Inflation Adjustment Act Improvements Act of 2015, at 1 (Dec. 15, 2022) (M–23–05).

<sup>2</sup> *Id.* at 3–4; FCPIAA section 4(b)(2).

TABLE 1 TO PARAGRAPH (d)—Continued

United States Code citation	Civil monetary penalty description	Maximum penalty as of January 15, 2022	Maximum penalty as of January 15, 2023
31 U.S.C. 3802(a)(1) .....	Program Fraud Civil Remedies Act/making false claim .....	12,537	13,508
31 U.S.C. 3802(a)(2) .....	Program Fraud Civil Remedies Act/giving false statement .....	12,537	13,508

By the Commission.

**William Cody,**

*Secretary.*

[FR Doc. 2023-00399 Filed 1-10-23; 8:45 am]

**BILLING CODE 6730-02-P**

# Proposed Rules

Federal Register

Vol. 88, No. 7

Wednesday, January 11, 2023

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2022-1647; Project Identifier AD-2022-01379-T]

RIN 2120-AA64

#### Airworthiness Directives; Transport and Commuter Category Airplanes

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** The FAA proposes to supersede Airworthiness Directive 2021-23-12, which applies to all transport and commuter category airplanes equipped with a radio (also known as radar) altimeter. AD 2021-23-12 requires revising the limitations section of the existing airplane/aircraft flight manual to incorporate limitations prohibiting certain operations requiring radio altimeter data when in the presence of 5G C-Band interference as identified by Notices to Air Missions. Since the FAA issued AD 2021-23-12, the FAA determined that additional limitations are needed due to the continued deployment of new 5G C-Band base stations whose signals are expected to cover most of the contiguous United States at transmission frequencies between 3.7-3.98 GHz. This proposed AD would require revising the limitations section of the existing airplane/aircraft flight manual to incorporate limitations prohibiting certain operations requiring radio altimeter data, due to the presence of 5G C-Band interference. This proposed AD would also require modifying certain airplanes to allow safe operations in the United States 5G C-Band radio frequency environment. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** The FAA must receive comments on this proposed AD by February 10, 2023.

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- *Federal eRulemaking Portal:* Go to *regulations.gov*. Follow the instructions for submitting comments.
- *Fax:* 202-493-2251.
- *Mail:* U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- *Hand Delivery:* Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

*AD Docket:* You may examine the AD docket at *regulations.gov* under Docket No. FAA-2022-1647; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

**FOR FURTHER INFORMATION CONTACT:** Brett Portwood, Continued Operational Safety Technical Advisor, COS Program Management Section, Operational Safety Branch, FAA, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 817-222-5390; email: [operationalsafety@faa.gov](mailto:operationalsafety@faa.gov).

#### SUPPLEMENTARY INFORMATION:

##### Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under **ADDRESSES**. Include "Docket No. FAA-2022-1647; Project Identifier AD-2022-01379-T" at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend the proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to *regulations.gov*, including any personal information you provide. The agency will also post a report summarizing each

substantive verbal contact received about this proposed AD.

#### Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Brett Portwood, Continued Operational Safety Technical Advisor, COS Program Management Section, Operational Safety Branch, FAA, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 817-222-5390; email: [operationalsafety@faa.gov](mailto:operationalsafety@faa.gov). Any commentary that the FAA receives that is not specifically designated as CBI will be placed in the public docket for this rulemaking.

#### Background

The FAA issued Airworthiness Directive (AD) 2021-23-12, Amendment 39-21810 (86 FR 69984, December 9, 2021) (AD 2021-23-12), for all transport and commuter category airplanes equipped with a radio altimeter. AD 2021-23-12 was prompted by a determination that radio altimeters cannot be relied upon to perform their intended function if they experience interference from wireless broadband operations in the 3.7-3.98 GHz frequency band (5G C-Band). AD 2021-23-12 requires revising the limitations section of the existing airplane/aircraft flight manual (AFM) to incorporate limitations prohibiting certain operations requiring radio altimeter data when in the presence of 5G C-Band interference as identified by Notices to Air Missions (NOTAMs). The agency issued AD 2021-23-12 because radio altimeter anomalies that are undetected by the automation or pilot,

particularly close to the ground (*e.g.*, landing flare), could lead to loss of continued safe flight and landing.

#### Actions Since AD 2021–23–12

*Airplane Capability and Alterations:* Since issuing AD 2021–23–12, the FAA has reviewed data from dozens of alternative method of compliance (AMOC) requests, demonstrating that these radio altimeters can be relied upon to perform their intended function when operating beyond a certain protection radius around 5G C-Band transmitters. The iterative AMOC process allowed the FAA to gain insight into 5G C-Band transmission impacts to runway safety zones<sup>1</sup> in a progressively more sophisticated manner. At first, the FAA made conservative assumptions about the potential for impact on radio altimeters from 5G C-Band transmissions and applied them to all airport environments. During the FAA's initial analyses of AMOC requests, the FAA looked to protect against 5G C-Band interference during the most critical phases of flight (takeoffs and landings) by protecting a 2-nautical mile circle around the ends of runways. After some time and an improved understanding of the C-Band signals and their effects on specific radio altimeters, the FAA was able to reduce the protected area around the ends of runways and instead define a rectangular airspace area to protect around runways. The rectangular area was further refined into a trapezoidal area, which allowed for geographically expanded 5G C-Band transmissions that would not affect radio altimeter functions within the area. The FAA is now able to assess the 5G C-Band transmissions' impact to aviation operations in a specific area, taking into account the particularities of the signal and the airport environment. This assessment process is the Signal in Space (SiS) analysis. It includes a 3-dimensional model for the runway safety zone and considers base station heights and terrain around the airport.

The AMOC process also provided data about the varying levels of interference tolerance for a majority of radio altimeters on the market, allowing the FAA to understand the overall susceptibility to interference of the existing fleet of transport airplanes. In addition, the FAA learned about the aircraft alterations that can be accomplished quickly to improve a

<sup>1</sup>Runway safety zones are those areas around a runway where radio altimeters on transport and commuter category airplanes must function accurately and reliably during critical phases of flight where radio altimeter interference is most likely to result in a catastrophic accident.

radio altimeter's tolerance to transmissions in adjacent or nearby spectrum bands. Now that the FAA better understands the performance of specific radio altimeters and the means to make them more tolerant of transmissions in adjacent or nearby spectrum bands, the FAA is proposing the updated corrective action presented in this proposed AD.

*5G Compatibility:* AMOCs allowing operations otherwise prohibited by AD 2021–23–12 were based on voluntary operational mitigations undertaken by AT&T and Verizon, 5G C-Band licensees. The FAA, AT&T, and Verizon have collaborated extensively to ensure 5G C-Band radio frequency transmissions and aircraft operations can safely co-exist. In early January 2022, the FAA progressively tailored runway protection zones around airports to envelop only the airspace areas where critical phases of flight occur. The FAA has worked with AT&T and Verizon to improve the precision of the FAA's interference analyses used during the AMOC process. In turn, AT&T and Verizon coordinated their deployment around 5G C-Band mitigated airports (5G CMAs),<sup>2</sup> including in some cases reducing emission power around airports and committing to antenna pointing angles in the vertical plane to limit the potential for interference within the tailored runway safety zones. This collaborative work has allowed safe transport and commuter airplane operations to continue in the short term.

*Update to Safety Determination:* The FAA's initial determination that radio altimeters cannot be relied upon to perform their intended function if they experience interference from wireless broadband operations in the 5G C-Band remains unchanged. Therefore, this proposed AD would continue prohibiting the use of the same operations identified in the original AD (AD 2021–23–12) except for the prohibition of Required Navigation Performance with Authorization Required (RNP AR) Instrument Approach Procedures (IAP). After further analysis, the FAA has determined that 5G C-Band interference does not create an unsafe condition for an airplane conducting RNP AR IAPs because RNP AR operations do not rely

<sup>2</sup>For purposes of this proposed AD, a "5G C-Band mitigated airport" is an airport at which AT&T and Verizon have agreed to voluntarily limit their 5G deployment at the request of the FAA. The FAA will provide a list of these airports in the United States through the FAA Domestic Notice system. More information about Domestic Notices can be found on the FAA website at [https://www.faa.gov/air\\_traffic/publications/domesticnotices/dom1\\_foreword.html](https://www.faa.gov/air_traffic/publications/domesticnotices/dom1_foreword.html).

on direct radio altimeter inputs to determine arrival at altitude minimums or the flight path of the airplane. Therefore, this proposed AD would no longer prohibit RNP AR IAPs.

The FAA has also gained a better understanding of 5G C-Band interference beyond its effect on the operations prohibited by AD 2021–23–12. Since 5G C-band deployment began, the FAA has solicited reports of radio altimeter anomalies from aircraft pilots and operators.<sup>3</sup> The FAA has received over 420 reports of radio altimeter anomalies occurring within a known location of a 5G C-Band deployment. Approximately 315 of these reports were determined to not be related to 5G C-Band interference and were resolved through normal continued operational safety procedures. But for roughly 100 of the anomaly reports occurring within NOTAM areas, the FAA has excluded other potential causes for the anomaly, but could not rule out 5G C-Band interference as the potential source of the radio altimeter anomalies. These approximately 100 incidents included various flight deck effects such as erroneous Terrain Awareness and Warning System (TAWS) warnings, erroneous Traffic Collision Avoidance System (TCAS) warnings, erroneous landing gear warnings, and the erroneous display of radio altimeter data. Although these flight deck effects are less severe than the hazards associated with low-visibility landings, the FAA is concerned that to the extent 5G C-Band operations contributed to such events, the effects will occur more frequently as telecommunication companies continue to deploy 5G C-Band services throughout the country. The FAA has assessed the cumulative effects of increasing numbers of erroneous warnings across the fleet of transport and commuter airplanes. Although they may seem minor in isolation such that some may consider them a mere nuisance, these warnings have safety implications over time. The erroneous warnings increase flightcrew workload as they try to ascertain the validity of the warning. Repeated determinations that the warning occurred in error will lead to flightcrew desensitization to warnings from these safety systems.<sup>4</sup> In other words, as the

<sup>3</sup>Special Airworthiness Information Bulletin AIR-21-18R1 and subsequent revisions encouraged pilots to submit detailed reports of radio altimeter anomalies using the Radio Altimeter Anomaly Reporting Form available on the FAA website at [www.faa.gov/air\\_traffic/nas/RADALT\\_reports/](http://www.faa.gov/air_traffic/nas/RADALT_reports/).

<sup>4</sup>FAA research on nuisance alerts in the air traffic control (ATC) environment has shown that nuisance alerts can desensitize people toward the



flightcrew becomes more desensitized to erroneous warnings, they are less likely to react to an accurate warning, negating the safety benefits of the warning altogether and likely leading to a catastrophic incident.

AD 2021–23–12 does not mitigate the hazards associated with erroneous system warnings, focusing instead on the potentially more severe hazards associated with certain low visibility operations. Additionally, AD 2021–23–12 does not address other operations near airports, such as Category I instrument landing system (ILS) or visual flight rule (VFR) approaches. Therefore, the FAA has determined that additional corrective action is required to address this unsafe condition and proposes to supersede AD 2021–23–12.

*Why New Corrective Action is Needed:* In addition to the hazards due to the cumulative effects of nuisance warnings described earlier, the FAA expects an increase in the number of 5G C-Band base stations around airports in the national airspace system (NAS) and expects these stations to transmit in the entire 5G C-Band frequency band (from 3.7 to 3.98 GHz). Since the FAA issued AD 2021–23–12, which focused solely on the airport environment, 5G C-Band base stations have increasingly begun transmission in other areas of the country. Whereas 5G transmissions were initially limited to 3.7 to 3.8 GHz, these transmissions have also begun to expand to 3.8 to 3.98 GHz, and the FAA expects deployment at the higher end of the frequency range to expand after July 1, 2023.<sup>5</sup> These higher frequencies are nearer to the spectrum allocation where radio altimeters operate (4.2 to 4.4 GHz), which means that the potential for interference to radio altimeters from in-band and spurious<sup>6</sup> emissions may be more likely. In addition, the FAA expects approximately 19 additional telecommunication companies in

alert and lead to slower responses to real alerts. When people experience frequent false or low-urgency alerts, they tend to respond less quickly and less accurately to real and high-urgency alerts. Further, when there is a high incidence of nuisance alerts, people may suppress the alert before determining its actual status or may no longer treat the alert as mandatory. In both cases, overall alarm compliance decreases and they may stop responding to every alert. See *Nuisance Alerts in Operational ATC Environments: Classification and Frequencies*, Friedman-Berg, Allendoerfer, and Pai (2008). A copy of this paper can be found on the FAA website at [https://hf.tc.faa.gov/publications/2008-nuisance-alerts-in-operational-atc-environments/full\\_text.pdf](https://hf.tc.faa.gov/publications/2008-nuisance-alerts-in-operational-atc-environments/full_text.pdf).

<sup>5</sup> FCC licenses authorized 5G transmissions from 3.7 to 3.98 GHz.

<sup>6</sup> The tolerance to 5G spurious emissions is the level of aggregate interference in the radio altimeter band below which the installed radio altimeter system will meet its performance standards and perform its intended function.

addition to AT&T and Verizon will begin transmitting in the C-Band at some point after June 2023.<sup>7</sup> As the 21 telecommunication companies authorized to transmit 5G C-Band continue to expand transmissions throughout the country, using NOTAMs to identify affected areas and assessing proposed AMOCs will become untenable. NOTAMs are temporary means of disseminating information until the information can be publicized by other means. Given 5G C-Band signals are not expected to be temporary and that 5G signals will cover the contiguous U.S., NOTAMs are no longer the best means of communicating the location of the 5G C-Band environment. In addition, given the information gleaned over the past year, the FAA is now able to identify the conditions under which radio altimeters can be relied on to perform their intended function in the presence of a 5G C-Band environment. Therefore, case-by-case AMOC approvals that allow performing certain operations otherwise prohibited by an AD are no longer the most efficient way for airplane operators to show that their radio altimeters perform their intended function in the 5G C-Band environment.

*Determination of Airplane Radio Altimeter Tolerance Requirements:* The FAA is proposing interference tolerance requirements for radio altimeters that can be used across the affected fleet. Airplanes meeting these proposed minimum performance levels would be allowed to use the prohibited operations at the airports identified by an FAA Domestic Notice<sup>8</sup> after July 1, 2023. Airplanes operating under 14 CFR part 121 would also be required to have a radio altimeter that meets the proposed minimum performance standards (*i.e.*, tolerance requirements) on or before February 1, 2024.

The FAA determined the proposed interference tolerance requirements by using the fuller understanding of specific radio altimeter capabilities the FAA gained during the AMOC process. This process revealed the radio altimeter modifications that would not require a substantial system redesign, allowing aircraft operators to readily replace radio altimeters or install filters

<sup>7</sup> The additional 19 telecommunications companies will have access to the FCC-licensed spectrum after current users vacate use of the frequencies.

<sup>8</sup> Domestic Notices publish special notices or notices containing graphics pertaining to almost every aspect of aviation, such as military training areas, large scale sporting events, air show information, Special Management Programs (STMPs), and airport-specific information.

that allowed the aircraft to operate safely in a mitigated 5G environment.

The interference tolerance requirements are represented by a power spectral density (PSD) curve. The PSD curve, as depicted in figure 1 to paragraph (g)(2) of this proposed AD, represents the height over the ground and received power from a 5G C-Band emitter, at or below which the radio altimeter is expected to function reliably, measured in decibels per megahertz. These measurements are limited to the 5G C-MAs that will be listed in an FAA Domestic Notice. For purposes of this proposed AD, a “radio altimeter tolerant airplane” (also known within industry as a Group 4 airplane) is one for which the radio altimeter, as installed, demonstrates tolerance to radio altimeter interference at or above PSD curve threshold specified in figure 1 to paragraph (g)(2) of this proposed AD. A radio altimeter tolerant airplane also demonstrates tolerance to a spurious emission level of  $-48$  dBm/MHz in the 4200–4400 MHz radio altimeter band. For purposes of this proposed AD, a “non-radio altimeter tolerant airplane” (also known in industry as a Group 1, 2, or 3 airplane) is one for which the radio altimeter, as installed, does not demonstrate those tolerances. Some radio altimeters may already demonstrate tolerance to the 5G C-Band emissions without modification. Some may need to install filters between the radio altimeter and antenna to increase a radio altimeter’s tolerance. For others, the addition of a filter will not be sufficient to address interference susceptibility; therefore, the radio altimeter will need to be replaced with an upgraded radio altimeter. The FAA has determined that radio altimeter tolerant airplanes will not experience the unsafe condition at any airport identified by the FAA as a 5G CMA in an FAA Domestic Notice.

*Areas of Operation:* Over the past year, the FAA and the aviation industry, using data voluntarily provided by AT&T and Verizon, have identified maximum power levels for 5G C-Band transmissions that would permit safe aircraft operations. These power levels were identified using a SiS analysis that considers factors specific to an airport. That is, the SiS analysis considers specific 5G C-Band base station data to predict the 5G signal characteristics in the runway safety zone. The base station data includes 5G C-Band tower or antenna locations, fundamental transmission power levels, and antenna height. Using this analysis, the FAA has found that airplanes meeting the proposed standards as represented by the PSD curve can safely perform the

prohibited operations specified in this proposed AD at 5G CMAs. These operations are safe for radio altimeter tolerant airplanes to perform at these airports as long as telecommunication companies transmit at parameters under the current voluntary agreements with the FAA and FCC.

**Compatibility with 5G C-Band Providers:** The FAA has determined that any 5G C-Band provider that maintains the mitigated actions will not have an effect on the safety of transport and commuter airplanes with radio altimeters that meet the interference tolerance requirements at 5G CMAs. The FAA will assess the effects of any changes to transmission parameters at 5G CMAs to determine whether they would result in a hazard to air navigation. If the transmission changes negatively affect the safe operation of a radio altimeter tolerant airplane at that airport, the FAA will remove that airport from the 5G CMAs list.

Therefore, the FAA has determined that an unsafe condition exists when performing certain operations in the presence of 5G C-Band transmissions affecting the proper function of radio altimeters. For that reason, operators would be required to revise their existing AFM to prohibit these operations unless operating a radio altimeter tolerant airplane at a 5G CMA. This proposed requirement would take effect on July 1, 2023.

In addition, the FAA proposes to prohibit operations under part 121 in the U.S. after February 1, 2024, unless such operations are conducted with a radio altimeter tolerant airplane. As explained earlier, the FAA expects erroneous system warnings due to a malfunctioning radio altimeter to lead to flightcrew becoming desensitized to system warnings. Such desensitization negates the safety benefits of the warning itself and can lead to a catastrophic event. To minimize the number of erroneous system messages and the unsafe condition they produce, the FAA is proposing to require all airplanes operating under part 121 meet the PSD performance curve to operate in the contiguous U.S. after February 1, 2024. This is the date the FAA has determined to be as soon as reasonably practical, consistent with FAA policy.<sup>9</sup> Non-radio altimeter tolerant airplanes can operate under part 121 subject to the revised AFM limitations until February 1, 2024, without meeting the radio altimeter performance requirements proposed in this AD. If

this AD is finalized as proposed, after February 1, 2024, airplanes operating under part 121 must meet the radio altimeter tolerant requirements specified in figure 1 to paragraph (g)(2) of this proposed AD.

#### FAA's Determination

The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

#### Proposed AD Requirements in This NPRM

This proposed AD would maintain the requirements of AD 2021–23–12, except for the limitation pertaining to RNP AR IAPs by requiring, before further flight, revising the existing AFM to incorporate limitations prohibiting the following operations in the presence of 5G C-Band wireless broadband interference as identified by NOTAM (NOTAMs will be issued to state the specific airports where the radio altimeter is unreliable due to the presence of 5G C-Band wireless broadband interference). Alternatively, operators may incorporate the AFM revision required by paragraph (g) of AD 2021–23–12.

- Instrument Landing System (ILS) Instrument Approach Procedures (IAP) SA CAT I, SA CAT II, CAT II, and CAT III
- Automatic Landing operations
- Manual Flight Control Guidance System operations to landing/head-up display (HUD) to touchdown operation
- Use of Enhanced Flight Vision System (EFVS) to touchdown under 14 CFR 91.176(a).

On or before June 30, 2023, this proposed AD would also require revising the existing AFM to incorporate limitations prohibiting these same operations at all airports for non-radio altimeter tolerant airplanes. For radio altimeter tolerant airplanes, the prohibited operations would be allowed at 5G CMAs as identified in an FAA Domestic Notice.

On or before February 1, 2024, this proposed AD would require that airplanes operating under Part 121 be modified from a non-radio altimeter tolerant airplane to a radio altimeter tolerant airplane.

#### Interim Action

The FAA considers that this AD, if adopted as proposed, would be an

interim action. Once the Technical Standard Order (TSO) standard for radio altimeters is established, which will follow the existing international technical consensus on the establishment of the minimum operational performance standards (MOPS), the FAA anticipates that the MOPS will be incorporated into the TSO. The FAA also anticipates that aircraft incorporating equipment approved under the new Radio Altimeter TSO will be able to operate in both 5G CMAs and non-5G CMAs with no 5G C-Band-related AFM limitations. Once a new radio altimeter TSO is developed, approved, and available, the FAA might consider additional rulemaking.

#### Costs of Compliance

The FAA is requesting comments on this evaluation of costs and benefits for the proposed airworthiness directive. If adopted as proposed, this AD would affect approximately 7,993 airplanes of U.S. registry, all of which would require two AFM revisions. In Special Airworthiness Information Bulletin AIR–21–18R2, the FAA requested radio altimeter retrofit plans, timelines, and completion information from the aviation industry. The FAA did not receive comprehensive data, but based on the limited information the agency did receive, the FAA extrapolated impacts across industry. Based on that information, the FAA roughly estimates that almost 7,000 airplanes on the U.S. registry are already equipped or are being retrofitted to address radio altimeter interference tolerance before publication of this AD, or are not operated under 14 CFR part 121, and thus would only require AFM revisions to comply with this AD as proposed. Based on information received, some operators will comply with the proposed modification by replacing the radio altimeter and others by installing an externally mounted filter. The FAA estimates that approximately 180 airplanes would require radio altimeter replacement and 820 airplanes would require addition of radio altimeter filters to comply with the proposed modification requirement. As such, the FAA estimates the following costs to comply with this proposed AD, for a total cost of compliance of up to \$26,049,810:

<sup>9</sup>PS–ANM–25–05, *Risk Assessment Methodology for Transport Category Airplanes*, available at

[drs.faa.gov/browse/excelExternalWindow/4E5AE8707164674A862579510061F96B.0001](https://www.faa.gov/browse/excelExternalWindow/4E5AE8707164674A862579510061F96B.0001).

ESTIMATED COSTS

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
AFM revision for all airplanes .....	1 work-hour × \$85 per hour = \$85.	\$0 .....	\$85 .....	\$679,405 for 7,993 affected airplanes.
AFM revision (radio altimeter tolerant specific limitations).	1 work-hour × \$85 per hour = \$85.	\$0 .....	\$85 .....	\$679,405 for 7,993 affected airplanes.
Modification (radio altimeter replacement option).	.....	.....	Up to \$80,000 (includes parts and labor).	Up to \$14,400,000 for 180 affected airplanes.
Modification (filter addition option) ....	12 work-hours × \$85 per hour = \$1,020 per filter.	\$4,000 per filter.	\$5,020 per filter .....	Up to \$10,291,000 for 820 affected airplanes with 2 or 3 filters per airplane.

The benefits of the proposed AD would include the value of reducing aviation accident risks that are mitigated by TAWS, TCAS, and airborne windshear warning and flight guidance systems (windshear systems), all of which rely on proper performance of radio altimeters to perform their intended function. TAWS, TCAS, and windshear systems are examples of safety-enhancing systems required for operation under 14 CFR part 121. The FAA required these systems to address hazards which have caused accidents and fatalities during commercial air transportation in the United States. This proposed AD would maintain the same level of safety afforded by these and other safety systems before the use of the C-Band by 5G broadband networks. This proposed AD would also minimize erroneous system messages and the unsafe condition they produce.

**Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency’s authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

**Regulatory Findings**

The FAA has determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not

have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866, and
- (2) Would not affect intrastate aviation in Alaska.

**Regulatory Flexibility Act**

The Regulatory Flexibility Act (RFA) of 1980, Public Law 96–354, 94 Stat. 1164 (5 U.S.C. 601–612), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121, 110 Stat. 857, Mar. 29, 1996) and the Small Business Jobs Act of 2010 (Pub. L. 111–240, 124 Stat. 2504, Sept. 27, 2010), requires Federal agencies to consider the effects of the regulatory action on small business and other small entities and to minimize any significant economic impact. The term “small entities” comprises small businesses and not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

The FAA is publishing this Initial Regulatory Flexibility Analysis (IRFA) to aid the public in commenting on the potential impacts to small entities from this proposal. The FAA invites interested parties to submit data and information regarding the potential economic impact that would result from the proposal. The FAA will consider comments when making a determination or when completing a Final Regulatory Flexibility Assessment. An IRFA contains the following:

- (1) A description of the reasons why the action by the agency is being considered;
- (2) A succinct statement of the objective of, and legal basis for, the proposed rule;

(3) A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;

(4) A description of the projected reporting, recordkeeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;

(5) An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap, or conflict with the proposed rule; and

(6) A description of any significant alternatives to the proposed rule which accomplish the stated objectives of applicable statutes and which minimize any significant economic impact of the proposed rule on small entities.

**Reasons the Action Is Being Considered**

AD 2021–23–12 requires revising the limitations section of the existing AFM to incorporate limitations prohibiting certain operations requiring radio altimeter data when in the presence of 5G C-Band interference as identified by NOTAMs. Since the FAA issued AD 2021–23–12, the FAA determined that more restrictive limitations are needed due to the continued deployment of new 5G C-Band base stations whose signals are expected to cover most of the contiguous United States at transmission frequencies between 3.7–3.98 GHz. This proposed AD would address the unsafe condition resulting from the continued deployment of 5G C-Band transmissions and their interference to radio altimeters.

**Objectives of the Proposed Rule**

This proposed AD would require revising the limitations section of the existing AFM to incorporate limitations prohibiting certain operations requiring radio altimeter data, due to the presence of 5G C-Band interference. This proposed AD would also require modifying certain airplanes to allow safe operations in the United States 5G C-Band-radio frequency environment.

**Description and Estimate of the Number of Small Entities**

The FAA used the definition of small entities in the RFA for this analysis. The RFA defines small entities as small businesses, small governmental jurisdictions, or small organizations. In 5 U.S.C. 601(3), the RFA defines “small business” to have the same meaning as

“small business concern” under section 3 of the Small Business Act. The Small Business Act authorizes the Small Business Administration (SBA) to define “small business” by issuing regulations.

The SBA established size standards for various types of economic activities, or industries, under the North American Industry Classification System

(NAICS).<sup>10</sup> These size standards generally define small businesses based on the number of employees or annual receipts. The following table shows the SBA size standards for certificate holders as an example. Note that the SBA definition of a small business applies to the parent company and all affiliates as a single entity.

**SMALL BUSINESS SIZE STANDARDS: AIR TRANSPORTATION**

NAICS code	Description	SBA size standard
481111 .....	Scheduled Passenger Air Transportation .....	1,500 employees.
481112 .....	Scheduled Freight Air Transportation .....	1,500 employees.
481211 .....	Nonscheduled Chartered Passenger Air Transportation .....	1,500 employees.
481212 .....	Nonscheduled Chartered Freight Air Transportation .....	1,500 employees.
481219 .....	Other Nonscheduled Air Transportation .....	\$25 million.

Certificate holders affected by the proposed AD are those authorized to conduct operations under 14 CFR part 121. To identify small entities, the FAA reviewed readily available data sources

(e.g., company websites) and data available to the FAA through its certificate oversight functions to determine whether the certificate holder meets the applicable size standard. The

following table provides a summary of the estimated number of small entities to which this proposed AD would apply.

**ESTIMATED NUMBER OF SMALL ENTITIES**

Category	Number of entities	Number small entities	Percent small entities
Major .....	6	0	0
National .....	15	7	47
Passenger and Cargo Charter .....	12	8	67
Regional .....	15	7	47
Specialty Cargo .....	14	9	64
<b>Total .....</b>	<b>62</b>	<b>31</b>	<b>50</b>

**Projected Reporting, Recordkeeping, and Other Compliance Requirements**

No new recordkeeping or reporting requirements are associated with the proposed AD. Small entity compliance with the proposed AD would entail incorporation of AFM revisions at an approximate cost of \$170 per airplane. As discussed previously, the FAA estimates that the majority of airplanes operated by small entities will already be equipped in a manner that complies with the proposed requirements of this AD. Given the relatively small aircraft fleet sizes for small entity airlines, the FAA anticipates that a small number of airplanes would need to have radio altimeter filters installed (at an approximate cost of \$5,020 per filter), and a smaller number of airplanes will require a radio altimeter replacement (at an approximate cost of up to \$80,000 per airplane). These costs represent a small percentage of the overall cost of owning and operating a transport

category airplane, and to the extent that small entities provide more unique services or serve markets with less competition, these entities might be able to pass on these small incremental costs of AD compliance in the form of price increases.

**All Federal Rules That May Duplicate, Overlap, or Conflict**

There are no relevant Federal rules that may duplicate, overlap, or conflict with the proposed AD.

**Significant Alternatives Considered**

This AD specifies the only feasible alternatives identified for mitigating the unsafe condition. If a less burdensome method for mitigating the unsafe condition is identified, the FAA will consider proposed alternative methods of compliance, if requested, using the procedures found in 14 CFR 39.19.

**List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

**The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

**PART 39—AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

**Authority:** 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

- 2. The FAA amends § 39.13 by:
  - a. Removing Airworthiness Directive (AD) 2021–23–12, Amendment 39–21810 (86 FR 69984, December 9, 2021), and
  - b. Adding the following new AD:

<sup>10</sup> Small Business Administration (SBA) Table of Size Standards. Effective December 19, 2022.

<https://www.sba.gov/document/support-table-size-standards>.

**Transport and Commuter Category**

**Airplanes:** Docket No. FAA-2022-1647; Project Identifier AD-2022-01379-T.

**(a) Comments Due Date**

The FAA must receive comments on this airworthiness directive (AD) action by February 10, 2023.

**(b) Affected ADs**

This AD replaces AD 2021-23-12, Amendment 39-21810 (86 FR 69984, December 9, 2021) (AD 2021-23-12).

**(c) Applicability**

This AD applies to all transport and commuter category airplanes equipped with a radio (also known as radar) altimeter. These radio altimeters are installed on various transport and commuter category airplanes including, but not limited to, the airplanes for which the design approval holder is identified in paragraphs (c)(1) through (19) of this AD.

- (1) The Boeing Company
- (2) Airbus SAS
- (3) Bombardier Inc.
- (4) Embraer S.A.
- (5) Gulfstream Aerospace Corporation
- (6) Gulfstream Aerospace LP
- (7) Textron Aviation Inc.

- (8) Pilatus Aircraft Limited
- (9) Fokker Services B.V.
- (10) Saab AB, Support and Services
- (11) DeHavilland Aircraft of Canada Limited
- (12) Airbus Canada Limited Partnership
- (13) ATR-GIE Avions de Transport Régional
- (14) Yaborá Indústria Aeronáutica S.A.
- (15) MHI RJ Aviation ULC
- (16) BAE Systems (Operations) Limited
- (17) Lockheed Martin Corporation/Lockheed Martin Aeronautics Company
- (18) Viking Air Limited
- (19) Dassault Aviation

**(d) Subject**

Air Transport Association (ATA) of America Code 31, Indicating/Recording System; 34, Navigation.

**(e) Unsafe Condition**

This AD was prompted by determination that radio altimeters cannot be relied upon to perform their intended function if they experience interference from wireless broadband operations in the 3.7-3.98 GHz frequency band (5G C-Band). The FAA is issuing this AD because radio altimeter anomalies that are undetected by the automation or pilot, particularly close to the ground (e.g., landing flare), could lead to loss of continued safe flight and landing.

Additionally, radio altimeter anomalies could lead to increased flightcrew workload and flightcrew desensitization to warnings.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Definitions**

(1) For purposes of this AD, a “5G C-Band mitigated airport” (5G CMA) is an airport at which the telecommunications companies have agreed to voluntarily limit their 5G deployment at the request of the FAA, as identified by an FAA Domestic Notice.

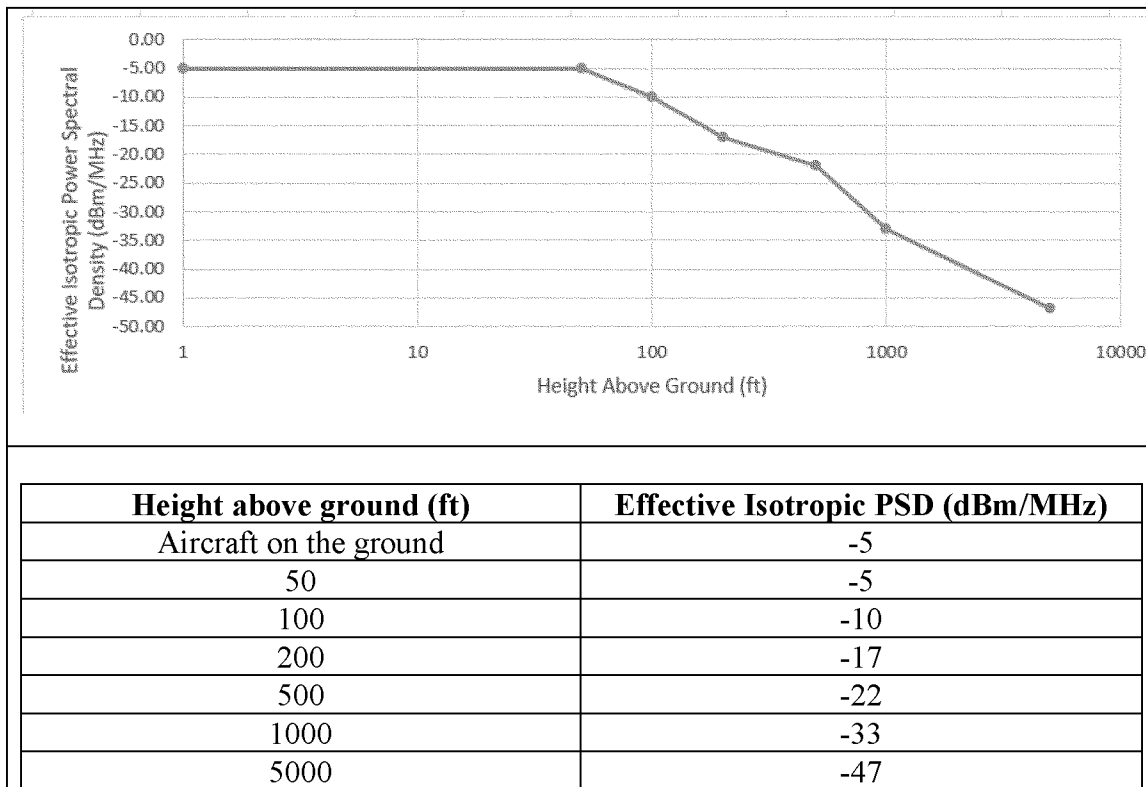
(2) For purposes of this AD, a “radio altimeter tolerant airplane” is one for which the radio altimeter, as installed, demonstrates the tolerances specified in paragraphs (g)(2)(i) and (ii) of this AD, using a method approved by the FAA.

(i) Tolerance to radio altimeter interference at or above the power spectral density (PSD) curve threshold specified in figure 1 to paragraph (g)(2) of this AD.

(ii) Tolerance to an aggregate base station conducted spurious emission level of -48 dBm/MHz in the 4200-4400 MHz radio altimeter band.

**BILLING CODE 4910-13-P**

**Figure 1 to paragraph (g)(2) – Effective Power Spectral Density**



(3) For purposes of this AD, a “non-radio altimeter tolerant airplane” is one for which the radio altimeter, as installed, does not demonstrate the tolerances specified in paragraphs (g)(2)(i) and (ii) of this AD.

**(h) Airplane/Aircraft Flight Manual (AFM) Revision for All Airplanes**

Before further flight: Revise the Limitations Section of the existing AFM by incorporating the limitations specified in figure 2 to

paragraph (h) of this AD. This may be done by inserting a copy of figure 2 to paragraph (h) of this AD into the existing AFM. If an operator has complied with paragraph (g) of

AD 2021–23–12, that action satisfies the requirements of this paragraph.

**Figure 2 to paragraph (h) – AFM Revision**

**(Required by AD 20\*\*-\*\*-\*\*)**

**Radio Altimeter Flight Restrictions**

When operating in U.S. airspace, the following operations requiring radio altimeter are prohibited in the presence of 5G C-Band wireless broadband interference as identified by NOTAM (NOTAMs will be issued to state the specific airports where the radio altimeter is unreliable due to the presence of 5G C-Band wireless broadband interference):

- Instrument Landing System (ILS) Instrument Approach Procedures (IAP) SA CAT I, SA CAT II, CAT II, and CAT III
- Automatic Landing operations
- Manual Flight Control Guidance System operations to landing/head-up display (HUD) to touchdown operation
- Use of Enhanced Flight Vision System (EFVS) to touchdown under 14 CFR 91.176(a)

**(i) AFM Revision for Non-Radio Altimeter Tolerant Airplanes**

For non-radio altimeter tolerant airplanes, do the actions specified in paragraphs (i)(1) and (2) of this AD.

(1) On or before June 30, 2023, revise the Limitations Section of the existing AFM by incorporating the limitations specified in figure 3 to paragraph (i) of this AD. This may be done by inserting a copy of figure 3 to paragraph (i) of this AD into the existing AFM. Incorporating the AFM revision

required by this paragraph terminates the AFM revision required by paragraph (h) of this AD.

(2) Before further flight after incorporating the limitations specified in figure 3 to paragraph (i) of this AD, remove the AFM revision required by paragraph (h) of this AD.

**Figure 3 to paragraph (i) – AFM Revision for Non-Radio Altimeter Tolerant Airplanes**

**(Required by AD 20\*\*-\*\*-\*\*)**

**Radio Altimeter Flight Restrictions**

Due to the presence of 5G C-Band wireless broadband interference, when operating in the contiguous U.S. airspace, the following operations requiring radio altimeter are prohibited:

- Instrument Landing System (ILS) Instrument Approach Procedures (IAP) SA CAT I, SA CAT II, CAT II, and CAT III
- Automatic Landing operations
- Manual Flight Control Guidance System operations to landing/head-up display (HUD) to touchdown operation
- Use of Enhanced Flight Vision System (EFVS) to touchdown under 14 CFR 91.176(a).

**(j) AFM Revision for Radio Altimeter Tolerant Airplanes**

For radio altimeter tolerant airplanes, do the actions specified in paragraphs (j)(1) and (2) of this AD.

(1) On or before June 30, 2023, revise the Limitations Section of the existing AFM by incorporating the limitations specified in figure 4 to paragraph (j) of this AD. This may be done by inserting a copy of figure 4 to paragraph (j) of this AD into the existing AFM. Incorporating the AFM revision

required by this paragraph terminates the AFM revision required by paragraph (h) of this AD.

(2) Before further flight after incorporating the limitations specified in figure 4 to paragraph (j) of this AD, remove the AFM revision required by paragraph (h) of this AD.

**Figure 4 to paragraph (j) – AFM Revision for Radio Altimeter Tolerant airplanes****(Required by AD 20\*\*-\*\*-\*\*)****Radio Altimeter Flight Restrictions**

Due to the presence of 5G C-Band wireless broadband interference, when operating in the contiguous U.S. airspace, the following operations requiring radio altimeter are prohibited unless operating at a 5G C-Band mitigated airport as identified in an FAA

*Domestic Notice:*

- Instrument Landing System (ILS) Instrument Approach Procedures (IAP) SA CAT I, SA CAT II, CAT II, and CAT III
- Automatic Landing operations
- Manual Flight Control Guidance System operations to landing/head-up display (HUD) to touchdown operation
- Use of Enhanced Flight Vision System (EFVS) to touchdown under 14 CFR 91.176(a).

**(k) Modification**

(1) For non-radio altimeter tolerant airplanes operating under 14 CFR part 121: On or before February 1, 2024, modify each airplane to a radio altimeter tolerant airplane and accomplish the actions specified in paragraphs (k)(i) and (ii) of this AD.

(i) Revise the Limitations Section of the existing AFM by incorporating the limitations specified in figure 4 to paragraph (j) of this AD. This may be done by inserting a copy of figure 4 to paragraph (j) of this AD into the existing AFM.

(ii) Remove the AFM revision required by paragraph (i) of this AD.

(2) For non-radio altimeter tolerant airplanes not operating under part 121, accomplishing the modification and AFM revision specified in paragraph (k)(1) of this AD is optional.

**(l) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Operational Safety Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the Operational Safety Branch, send it to the attention of the person identified in paragraph (m) of this AD. Information may be emailed to: *AMOC@faa.gov*.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) AMOCs approved for AD 2021–23–12 are approved as AMOCs for the requirements specified in paragraph (h) of this AD.

**(m) Related Information**

For more information about this AD, contact Brett Portwood, Continued Operational Safety Technical Advisor, COS Program Management Section, Operational Safety Branch, FAA, 3960 Paramount Boulevard, Lakewood, CA 90712–4137;

phone: 817–222–5390; email: *operationalsafety@faa.gov*.

**(n) Material Incorporated by Reference**

None.

Issued on January 6, 2023.

**Gaetano A. Sciortino,**

*Acting Director, Compliance & Airworthiness Division, Aircraft Certification Service.*

[FR Doc. 2023–00420 Filed 1–9–23; 8:45 am]

**BILLING CODE 4910–13–C**

**DEPARTMENT OF HOMELAND SECURITY****Coast Guard****33 CFR Part 165**

**[Docket Number USCG–2022–0995]**

**RIN 1625–AA00**

**Safety Zones in Reentry Sites; Panama City, Pensacola, and Tallahassee, Florida**

**AGENCY:** Coast Guard, DHS.

**ACTION:** Notice of proposed rulemaking.

**SUMMARY:** This proposed rule would implement a special activities provision of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021. The Coast Guard is proposing to establish three temporary safety zones for the safe splashdown and recovery of reentry vehicles launched by Space Exploration Technologies Corporation (SpaceX) in support of National Aeronautics and Space Administration (NASA) missions. The proposed temporary safety zones are located within the Coast Guard District Eight area of responsibility (AOR) offshore of Panama City, Pensacola, and Tallahassee, Florida.

These proposed temporary safety zones are also located specifically within the Coast Guard Sector Mobile AOR. This proposed rule would prohibit U.S.-flagged vessels from entering any of the temporary safety zones unless authorized by the Commanding Officer of Coast Guard Sector Mobile or a designated representative. Foreign-flagged vessels would be encouraged to remain outside the safety zones. This action is necessary to protect vessels and waterway users from the potential hazards created by reentry vehicle splashdowns and recovery operations in the U.S. Exclusive Economic Zone (EEZ). It is also necessary to provide for the safe recovery of reentry vehicles, and any personnel involved in reentry services, after the splashdown. We invite your comments on this proposed rulemaking.

**DATES:** Comments and related material must be received by the Coast Guard on or before February 10, 2023.

**ADDRESSES:** You may submit comments identified by docket number USCG–2022–0995 using the Federal Decision Making Portal at *https://www.regulations.gov*. See the “Public Participation and Request for Comments” portion of the **SUPPLEMENTARY INFORMATION** section for further instructions on submitting comments.

**FOR FURTHER INFORMATION CONTACT:** If you have questions about this proposed rulemaking, call or email Lieutenant Andrew Anderson Sector Mobile Waterways Division (dpw), U.S. Coast Guard; telephone: 251–441–5940, email *Andrew.S.Anderson@uscg.mil*.

**SUPPLEMENTARY INFORMATION:**

## I. Table of Abbreviations

AOR	Area of Responsibility
BNM	Broadcast Notice to Mariners
CFR	Code of Federal Regulations
DHS	Department of Homeland Security
EEZ	Exclusive Economic Zone
FAA	Federal Aviation Administration
FL	Florida
FR	Federal Register
MSIB	Marine Safety Information Bulletin
NASA	National Aeronautics and Space Administration
NM	Nautical Mile
NOE	Notice of Enforcement
NPRM	Notice of Proposed Rulemaking
§	Section
SpaceX	Space Exploration Technologies Corporation
U.S.	United States
U.S.C.	United States Code

## II. Background, Purpose, and Legal Basis

On January 1, 2021, the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (Pub. L. 116–283) (Authorization Act) was enacted. Section 8343 (134 Stat. 4710) calls for the Coast Guard to conduct a two-year pilot program to establish and implement a process to establish safety zones to address special activities in the U.S. Exclusive Economic Zone (EEZ).<sup>1</sup> These special activities include space activities<sup>2</sup> carried out by United States (U.S.) citizens. Terms used to describe space activities, including *launch*, *reentry site*, and *reentry vehicle*, are defined in 51 U.S.C. 50902, and in this document.

The Coast Guard has long monitored space activities impacting the maritime domain and taken actions to ensure the safety of vessels and the public as needed during space launch<sup>3</sup> operations. In conducting this activity, the Coast Guard engages with other government agencies, including the Federal Aviation Administration (FAA) and National Aeronautics and Space Administration (NASA), and private space operators, including Space Exploration Technologies Corporation (SpaceX). This engagement is necessary to ensure statutory and regulatory obligations are met to ensure the safety of launch operations and waterway users.

During this engagement, the Coast Guard was informed of space reentry vehicles and recovery operations in the U.S. EEZ. Section 50902 of 51 U.S.C.

<sup>1</sup> The Coast Guard defines the U.S. *exclusive economic zone* in 33 CFR 2.30(a). *Territorial sea* is defined in 33 CFR 2.22.

<sup>2</sup> *Space Activities* means space activities, including launch and reentry, as such terms are defined in section 50902 of Title 51, United States Code, carried out by United States citizens.

<sup>3</sup> The term *launch* is defined in 51 U.S.C. 50902.

defines “reentry vehicle” as a vehicle designed to return from Earth orbit or outer space to Earth, or a reusable launch vehicle designed to return from Earth orbit or outer space to Earth, substantially intact. SpaceX, a U.S. company, has identified three reentry sites<sup>4</sup> within the U.S. EEZ of the Coast Guard District Eight area of responsibility (AOR) expected to be used for the splashdown<sup>5</sup> and recovery of reentry vehicles. All of these sites are located in the Gulf of Mexico off the coast of Florida (FL).

On May 4, 2022, we published a temporary final rule in the **Federal Register** (87 FR 26273) for two anticipated reentry vehicle recovery missions within the Coast Guard District Eight AOR offshore of Panama City, Pensacola, and Tallahassee, FL from April 17, 2022 through May 15, 2022. Based on the date the Coast Guard was informed of the reentry, and the immediate need to establish the safety zone, the Coast Guard did not have sufficient time to publish a notice of proposed rulemaking (NPRM) for that rule. The Coast Guard additionally published recovery mission temporary final rules for the periods from August 22, 2022 through September 30, 2022 (87 FR 51253) and October 12, 2022 through November 10, 2022 (87 FR 61508).

The purpose of this rulemaking is to ensure the protection of vessels and waterway users in the U.S. EEZ from the potential hazards created by reentry vehicle splashdowns and recovery operations, and the safe recovery of reentry vehicles and personnel involved in reentry services.<sup>6</sup> The Coast Guard is proposing this rulemaking under authority of section 8343 of the Authorization Act.

## III. Discussion of Proposed Rule

The Coast Guard is proposing to establish three temporary safety zones in the U.S. EEZ for the safe reentry vehicle splashdown and recovery of reentry vehicles launched by SpaceX in support of NASA missions through the remainder of the pilot period, which ends on February 4, 2024.

The proposed temporary safety zones are located within the Coast Guard District Eight AOR offshore of Panama

<sup>4</sup> *Reentry site* means the location on Earth to which a reentry vehicle is intended to return (as defined in a license the FAA Administrator issues or transfers under this chapter).

<sup>5</sup> *Splashdown* refers to the landing of a reentry vehicle into a body of water.

<sup>6</sup> *Reentry Services* means (1) activities involved in the preparation of a reentry vehicle and payload, crew (including crew training), government astronaut, or space flight participant, if any, for reentry; and (2) the conduct of a reentry.

City, Pensacola, and Tallahassee, FL in the Gulf of Mexico. The proposed rule would prohibit U.S.-flagged vessels from entering any of the safety zones unless authorized by the Commanding Officer of Coast Guard Sector Mobile or a designated representative. Because the safety zones are within the U.S. EEZ, only U.S.-flagged vessels would be subject to enforcement. However, all foreign-flagged vessels would be encouraged to remain outside the safety zones.

The three proposed temporary safety zones are located off the coast of FL in the Gulf of Mexico in the following areas: (1) Approximately 30 NM southwest from Pensacola; (2) 26 NM southwest from Panama City; and 40 NM south of Tallahassee. All three safety zones have an approximate area of 100 square miles and are in the shape of a square.

The coordinates for the safety zones are based on the furthest north, east, south, and west points of the reentry vehicles splashdown and are determined from data and modeling by SpaceX and NASA. The coordinates take into account the trajectories of the reentry vehicles coming out of orbit, the potential risk to the public, and the proximity to medical facilities that meet NASA requirements. The specific coordinates for the three temporary safety zones are presented in the regulatory text at the end of this document.

To the extent feasible, the Sector Commander or a designated representative would inform the public of the activation of the three temporary safety zones by Notice of Enforcement (NOE) published in the **Federal Register** at least two days before the reentry vehicle splashdown. The NOE would identify the approximate date(s) during which a reentry vehicle splashdown and recovery operations would occur.

To the extent possible, twenty-four hours before a reentry vehicle splashdown and recovery operations, the Sector Commander or designated representative would inform the public that only one of the three safety zones would remain activated (subject to enforcement) until announced by Broadcast Notice to Mariners (BNM) on VHF–FM channel 16, and/or Marine Safety Information Bulletin (MSIB) (as appropriate) that the safety zone is no longer subject to enforcement. The specific temporary safety zone to be enforced would be based on varying mission and environmental factors, including atmospheric conditions, sea state, weather, and orbital calculations.

The MSIB would include the geographic coordinates of the activated



safety zone, a map identifying the location of the activated safety zone, and information related to potential hazards associated with a reentry vehicle splashdown and recovery operations associated with space activities, including marine environmental and public health hazards, such as the release of hydrazine and other potential oil or hazardous substances.

When the safety zone is activated, the Sector Commander or a designated representative would be able to restrict U.S.-flagged vessel movement including but not limited to transiting, anchoring, or mooring within the safety zone to protect vessels from hazards associated with space activities. The activated safety zone would ensure the protection of vessels and waterway users from the potential hazards created by reentry vehicle splashdowns and recovery operations. This includes protection during the recovery of a reentry vehicle, and the protection of personnel involved in reentry services and space support vessels.<sup>7</sup>

After a reentry vehicle splashdown, the Sector Commander or a designated representative would grant general permission to come no closer than 3 NM within the activated safety zone from any reentry vehicle or space support vessel engaged in the recovery operations. The recovery operations are expected to last approximately one hour. That should allow for sufficient time to let any potential toxic materials clear the reentry vehicle, recovery of the reentry vehicle by the space support vessel, and address any potential medical evacuations for any personnel involved in reentry services that were onboard the reentry vehicle.

Once a reentry vehicle and any personnel involved in reentry services are removed from the water and secured onboard a space support vessel, the Sector Commander or designated representative would issue a BNM on VHF-FM channel 16 announcing the activated safety zone is no longer subject to enforcement. A photograph of a reentry vehicle and space support vessel expected to use the reentry sites are available in the docket.

#### IV. Regulatory Analyses

We developed this proposed rule after considering numerous statutes and Executive orders related to rulemaking. Below we summarize our analyses based on a number of these statutes and

<sup>7</sup> *Space Support Vessel* means any vessel engaged in the support of space activities. These vessels are typically approximately 170 feet in length, have a forward wheelhouse, and are equipped with a helicopter pad and lifting crane.

Executive orders, and we discuss First Amendment rights of protestors.

#### A. Regulatory Planning and Review

Executive Orders 12866 and 13563 direct agencies to assess the costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits. This NPRM has not been designated a “significant regulatory action,” under Executive Order 12866. Accordingly, the NPRM has not been reviewed by the Office of Management and Budget (OMB).

This regulatory action determination is based on the size, location, duration, and scope of the temporary safety zones. The temporary safety zones are limited in size and location to only those areas where reentry vehicles splashdown and recovery operations occur. The safety zones are limited in scope, as vessel traffic would be able to safely transit around the activated safety zone which will only impact a small part of the U.S. EEZ within the Gulf of Mexico. The proposed rule involves the establishment of three temporary safety zones which would be activated two days before a reentry vehicle splashdown and recovery operations. Twenty-four hours before a reentry vehicle splashdown, one of the three temporary safety zones would remain active. After a reentry vehicle splashdown, general permission would be granted to come no closer than 3 NM within the activated safety zone. There is a danger associated with fumes from the reentry vehicle after it has splashed down. Once a reentry vehicle and any personnel involved in reentry services are removed from the water and secured onboard a space support vessel, the activated safety zone would no longer be subject to enforcement. The activated safety zone would ensure the protection of vessels and waterway users from the potential hazards created by a reentry vehicle splashdown and recovery operations and the recovery of a reentry vehicle, personnel involved in reentry services, and space support vessel.

#### B. Impact on Small Entities

The Regulatory Flexibility Act of 1980, 5 U.S.C. 601–612, as amended, requires Federal agencies to consider the potential impact of regulations on small entities during rulemaking. The term “small entities” comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000. The Coast Guard certifies under 5 U.S.C.

605(b) that this proposed rule would not have a significant economic impact on a substantial number of small entities.

The safety zones are only expected to last a few hours from reentry vehicle splashdown to recovery. Vessels will be able to transit around the activated safety zone location during these recoveries. We do not anticipate any significant economic impact resulting from activation of the safety zones.

If you think that your business, organization, or governmental jurisdiction qualifies as a small entity, and that this proposed rule would have a significant economic impact on it, please submit a comment (see **ADDRESSES**) explaining why you think it qualifies and how and to what degree this rule would economically affect it.

Under section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121), we want to assist small entities in understanding this proposed rule. If the proposed rule would affect your small business, organization, or governmental jurisdiction and you have questions concerning its provisions or options for compliance, please call or email the person listed in the **FOR FURTHER INFORMATION CONTACT** section. The Coast Guard will not retaliate against small entities that question or complain about this proposed rule or any policy or action of the Coast Guard.

#### C. Collection of Information

This proposed rule would not call for a new collection of information under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520).

#### D. Federalism and Indian Tribal Governments

A rule has implications for federalism under Executive Order 13132 (Federalism), if it has a substantial direct effect on the States, on the relationship between the National Government and the States, or on the distribution of power and responsibilities among the various levels of government. We have analyzed this proposed rule under that Order and have determined that it is consistent with the fundamental federalism principles and preemption requirements described in Executive Order 13132.

Also, this proposed rule does not have tribal implications under Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments) because it would not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the

Federal Government and Indian tribes. If you believe this proposed rule has implications for federalism or Indian tribes, please call or email the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

#### E. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531–1538) requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of \$100,000,000 (adjusted for inflation) or more in any one year. Though this proposed rule would not result in such an expenditure, we do discuss the potential effects of this proposed rule elsewhere in this preamble.

#### F. Environment

We have analyzed this proposed rule under Department of Homeland Security Directive 023–01, Rev. 1, associated implementing instructions, and Environmental Planning COMDTINST 5090.1 (series), which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (42 U.S.C. 4321–4370f), and have made a preliminary determination that this action is one of a category of actions that do not individually or cumulatively have a significant effect on the human environment. This proposed rule involves the establishment of three temporary safety zones which would be activated two days before a reentry vehicle splashdown and recovery operations. Twenty-four hours before a reentry vehicle splashdown, one of the three temporary safety zones would remain active. After a reentry vehicle splashdown, general permission would be granted to come no closer than 3 NM within the activated safety zone. Once a reentry vehicle and any personnel involved in reentry services are removed from the water and secured onboard a space support vessel, the activated safety zone would no longer be subject to enforcement. Normally such actions are categorically excluded from further review under paragraph L60(a) of Appendix A, Table 1 of DHS Instruction Manual 023–01–001–01, Rev. 1. A preliminary Record of Environmental Consideration supporting this determination is available in the docket. For instructions on locating the docket, see the **ADDRESSES** section of this preamble. We seek any comments or information that may lead to the discovery of a significant environmental impact from this proposed rule.

#### G. Protest Activities

The Coast Guard respects the First Amendment rights of protesters. Protesters are asked to call or email the person listed in the **FOR FURTHER INFORMATION CONTACT** section to coordinate protest activities so that your message can be received without jeopardizing the safety or security of people, places, or vessels.

#### V. Public Participation and Request for Comments

We view public participation as essential to effective rulemaking, and will consider all comments and material received during the comment period. Your comment can help shape the outcome of this rulemaking. If you submit a comment, please include the docket number for this rulemaking, indicate the specific section of this document to which each comment applies, and provide a reason for each suggestion or recommendation.

**Submitting comments.** We encourage you to submit comments through the Federal Decision Making Portal at <https://www.regulations.gov>. To do so, go to <https://www.regulations.gov>, type USCG–2022–0995 in the search box and click “Search.” Next, look for this document in the Search Results column, and click on it. Then click on the Comment option. If you cannot submit your material by using <https://www.regulations.gov>, call or email the person in the **FOR FURTHER INFORMATION CONTACT** section of this proposed rule for alternate instructions.

**Viewing material in docket.** To view documents mentioned in this proposed rule as being available in the docket, find the docket as described in the previous paragraph, and then select “Supporting & Related Material” in the Document Type column. Public comments will also be placed in our online docket and can be viewed by following instructions on the <https://www.regulations.gov> Frequently Asked Questions web page. We review all comments received, but we will only post comments that address the topic of the proposed rule. We may choose not to post off-topic, inappropriate, or duplicate comments that we receive.

**Personal information.** We accept anonymous comments. Comments we post to <https://www.regulations.gov> will include any personal information you have provided. For more about privacy and submissions to the docket in response to this document, see DHS’s eRulemaking System of Records notice (85 FR 14226, March 11, 2020).

#### List of Subjects in 33 CFR Part 165

Harbors, Marine safety, Navigation (water), Reporting and recordkeeping requirements, Security measures, Waterways.

For the reasons discussed in the preamble, the Coast Guard is proposing to amend 33 CFR part 165 as follows:

#### PART 165—REGULATED NAVIGATION AREAS AND LIMITED ACCESS AREAS

■ 1. The authority citation for part 165 is revised to read as follows:

**Authority:** 46 U.S.C. 70034, 70051, 70124; section 8343 of Pub. L. 116–283, 134 Stat. 3388, 4710; 33 CFR 1.05–1, 6.04–1, 6.04–6, and 160.5; Department of Homeland Security Delegation No. 00170.1, Revision No. 01.3.

■ 2. Add § 165.T08–0995 to read as follows:

#### § 165.T08–0995 Safety Zones in Reentry Sites; Panama City, Pensacola, and Tallahassee, Florida.

(a) *Location.* The coordinates used in this paragraph are based on the World Geodetic System (WGS) 1984. The following areas are safety zones:

(1) *Panama City Site.* All waters from surface to bottom encompassed within a line connecting the following points: Point 1, thence to Point 2, thence to Point 3, thence to Point 4, and then back to Point 1.

Point 1 .....	29°47'46" N	086°16'44" W
Point 2 .....	29°47'46" N	086°05'20" W
Point 3 .....	29°37'48" N	086°16'44" W
Point 4 .....	29°37'48" N	086°05'20" W

(2) *Pensacola.* All waters from surface to bottom encompassed within a line connecting the following points: Point 1, thence to Point 2, thence to Point 3, thence to Point 4, and then back to Point 1.

Point 1 .....	29°53'02" N	087°35'46" W
Point 2 .....	29°53'02" N	087°24'14" W
Point 3 .....	29°42'58" N	087°35'46" W
Point 4 .....	29°42'58" N	087°24'14" W

(3) *Tallahassee Site.* All waters from surface to bottom encompassed within a line connecting the following points: Point 1, thence to Point 2, thence to Point 3, thence to Point 4, and then back to Point 1.

Point 1 .....	29°21'47" N	084°17'46" W
Point 2 .....	29°21'47" N	084°06'18" W
Point 3 .....	29°11'46" N	084°17'46" W
Point 4 .....	29°11'46" N	084°06'18" W

(b) *Definitions.* As used in this section—

*Designated representative* means a Coast Guard Patrol Commander, including a Coast Guard coxswain, petty

officer, or other officer operating a Coast Guard vessel; Coast Guard Representatives in the Merrill Operations Center; and other officers designated by the Sector Commander of Coast Guard Sector Mobile.

*Sector Commander* means Commander of Coast Guard Sector Mobile.

*Reentry Services* means (1) activities involved in the preparation of a reentry vehicle and payload, crew (including crew training), government astronaut, or space flight participant, if any, for reentry; and (2) the conduct of a reentry.

*Reentry vehicle* means a vehicle designed to return from Earth orbit or outer space to Earth, or a reusable launch vehicle designed to return from Earth orbit or outer space to Earth, substantially intact.

*Space Support Vessel* means any vessel engaged in the support of space activities. These vessels are typically approximately 170 feet in length, have a forward wheelhouse, and are equipped with a helicopter pad and lifting crane.

*Splashdown* means the landing of a reentry vehicle into a body of water.

(c) *Regulations*. (1) Because the safety zones described in paragraph (a) of this section are within the U.S. Exclusive Economic Zone, only U.S.-flagged vessels are subject to enforcement. All foreign-flagged vessels are encouraged to remain outside the safety zones.

(2) In accordance with the general regulations in 33 CFR part 165, subpart C, no U.S.-flagged vessel may enter the safety zones described in paragraph (a) of this section unless authorized by the Sector Commander or a designated representative, except as provided in paragraph (d)(3).

(d) *Notification of Enforcement*. (1) To the extent feasible, the Sector Commander or a designated representative will inform the public of the activation of the three safety zones described in paragraph (a) of this section by Notice of Enforcement published in the **Federal Register** at least two days before the splashdown.

(2) To the extent possible, twenty-four hours before a reentry vehicle splashdown, the Sector Commander or designated representative will inform the public that only one of the three safety zones described in paragraph (a) will remain activated until announced by Broadcast Notice to Mariners on VHF-FM channel 16, and/or Marine Safety Information Bulletin (as appropriate) that the safety zone is no longer subject to enforcement.

(3) After a reentry vehicle splashdown, the Sector Commander or a designated representative will grant

general permission to come no closer than 3 nautical miles of any reentry vehicle or space support vessel engaged in the recovery operations, within the activated safety zone described in paragraph (a) of this section.

(4) Once a reentry vehicle, and any personnel involved in reentry service, are removed from the water and secured onboard a space support vessel, the Sector Commander or designated representative will issue a Broadcast Notice to Mariners on VHF-FM channel 16 announcing the activated safety zone is no longer subject to enforcement.

(e) *Effective period*. This section is effective from [EFFECTIVE DATE OF FINAL RULE] through February 4, 2024.

Dated: January 5, 2023.

**Ulysses S. Mullins**,

*Captain, Commander, Coast Guard Sector Mobile, Captain of the Port Mobile.*

[FR Doc. 2023-00354 Filed 1-10-23; 8:45 am]

**BILLING CODE 9110-04-P**

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## DEPARTMENT OF DEFENSE

### Department of the Army, Corps of Engineers

#### 33 CFR Part 334

#### Military Ocean Terminal Concord, California; Restricted Area

**AGENCY:** U.S. Army Corps of Engineers, DoD.

**ACTION:** Notice of proposed rulemaking and request for comments.

**SUMMARY:** The U.S. Army Military Surface Deployment and Distribution Command (SDDC) requested that the U.S. Army Corps of Engineers (Corps) revise the restricted area boundaries for the Military Ocean Terminal Concord (MOTCO). The MOTCO restricted area is located along the south shore of Suisun Bay, north of the City of Concord, Contra Costa County, California. The request to revise the boundaries of the MOTCO restricted area is due to the need to provide a more sufficient security buffer distance in navigable waters next to critical MOTCO shoreline infrastructure.

**DATES:** Written comments must be submitted on or before February 10, 2023.

**ADDRESSES:** You may submit comments, identified by docket number COE-2022-0012, by any of the following methods:

*Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the instructions for submitting comments.

*Email:* [david.b.olson@usace.army.mil](mailto:david.b.olson@usace.army.mil). Include the docket number COE-2022-0012 in the subject line of the message.

*Mail:* U.S. Army Corps of Engineers, Attn: CECW-CO (David B. Olson), 441 G Street NW, Washington, DC 20314-1000.

*Hand Delivery/Courier:* Due to security requirements, we cannot receive comments by hand delivery or courier.

*Instructions:* Direct your comments to docket number COE-2022-0012. All comments received will be included in the public docket without change and may be made available on-line at <http://www.regulations.gov>, including any personal information provided, unless the commenter indicates that the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI, or otherwise protected, through [www.regulations.gov](http://www.regulations.gov) or email. The [www.regulations.gov](http://www.regulations.gov) website is an anonymous access system, which means we will not know your identity or contact information unless you provide it in the body of your comment. If you send an email directly to the Corps without going through [www.regulations.gov](http://www.regulations.gov), your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the internet. If you submit an electronic comment, we recommend that you include your name and other contact information in the body of your comment and with any compact disk you submit. If we cannot read your comment because of technical difficulties and cannot contact you for clarification, we may not be able to consider your comment. Electronic comments should avoid the use of any special characters, any form of encryption, and be free of any defects or viruses.

*Docket:* For access to the docket to read background documents or comments received, go to [www.regulations.gov](http://www.regulations.gov). All documents in the docket are listed. Although listed in the index, some information is not publicly available, such as CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form.

**FOR FURTHER INFORMATION CONTACT:** Mr. David Olson, Headquarters, Operations and Regulatory Community of Practice, Washington, DC at 202-761-4922.

**SUPPLEMENTARY INFORMATION:** In response to this request by the SDDC, and pursuant to its authorities in Section 7 of the Rivers and Harbors Act of 1917 (40 Stat 266; 33 U.S.C. 1) and Chapter XIX of the Army Appropriations Act of 1919 (40 Stat 892; 33 U.S.C. 3), the Corps is proposing to amend its regulations at 33 CFR 334.1110(a) by revising the restricted area boundaries and making additional editorial changes to clarify the description of the new boundaries. The existing restricted area boundary at the western terminus would be shifted approximately 700 yards west along the shoreline so that it encompasses the mouth of Hastings Slough and eliminates a potential route of unauthorized encroachment into the MOTCO installation. Along the central and eastern parts of the restricted area, the existing restricted area boundary would be shifted bayward to the existing ship channel, in order to provide an adequate security buffer around MOTCO's piers. The revised eastern boundary of the restricted area would follow the southern edge of the ship channel, and would therefore not impact vessel traffic in the ship channel. The eastern shoreline terminus of the restricted area would remain at its current location.

**Procedural Requirements**

a. *Regulatory Planning and Review.* This proposed rule is not a "significant regulatory action" under Executive Order 12866 (58 FR 51735, October 4, 1993) and Executive Order 13563 (76 FR 3821, January 21, 2011) and it was not submitted to the Office of Management and Budget for review.

b. *Review Under the Regulatory Flexibility Act.* This proposed rule has been reviewed under the Regulatory Flexibility Act (Pub. L. 96-354). The Regulatory Flexibility Act generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice-and-comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities (*i.e.*, small businesses and small governments). The proposed change to the restricted area boundaries is necessary to eliminate a potential route of unauthorized encroachment into the MOTCO installation. Small entities can utilize navigable waters outside of the restricted area. Unless information is obtained to the contrary during the public notice comment period, the Corps expects that the modification of

the boundaries of this restricted area would have practically no economic impact on the public, no anticipated navigational hazard, or interference with existing waterway traffic. Unless information is obtained to the contrary during the comment period, the Corps certifies that the proposed rule would have no significant economic impact on the public.

c. *Review Under the National Environmental Policy Act.* The Corps expects that the proposed rule will not have a significant impact to the quality of the human environment and, therefore, preparation of an environmental impact statement will not be required. An environmental assessment will be prepared after the public notice period is closed and all comments have been received and considered. If no adverse comments are received, the environmental assessment will be prepared for the decision-making for the final rule. After the environmental assessment is prepared, it may be reviewed by contacting the Corps' San Francisco District office at 415-503-6795 or by email at *CESPN-RG-Info@usace.army.mil*.

d. *Unfunded Mandates Act.* The proposed rule does not impose an enforceable duty among the private sector and, therefore, is not a federal private sector mandate and is not subject to the requirements of Section 202 or 205 of the Unfunded Mandates Reform Act (Pub. L. 104-4, 109 Stat. 48, 2 U.S.C. 1501 *et seq.*). The Corps has also found, under Section 203 of the Act, that small governments will not be significantly or uniquely affected by this rulemaking.

e. *Congressional Review Act.* The Congressional Review Act, 5 U.S.C. 801 *et seq.*, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The Corps will submit a report containing the final rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This proposed rule is not a "major rule" as defined by 5 U.S.C. 804(2).

**List of Subjects in 33 CFR Part 334**

Danger zones, Navigation (water), Restricted areas, Waterways.

For the reasons set out in the preamble, the Corps is proposing to amend 33 CFR part 334 as follows:

**PART 334—DANGER ZONE AND RESTRICTED AREA REGULATIONS**

■ 1. The authority citation for 33 CFR part 334 continues to read as follows:

**Authority:** 40 Stat. 266 (33 U.S.C. 1) and 40 Stat. 892 (33 U.S.C. 3).

■ 2. Amend § 334.1110 by revising paragraph (a) to read as follows:

**§ 334.1110 Military Ocean Terminal Concord; restricted area.**

(a) *The area.* Beginning at point A on the shore west of the mouth of a small slough (known as Hastings Slough) and passing east of buoy R "6" bearing 60°30' for 2,860 yards, through Point B on the eastern end of the two Seal Islands, to point C on the southern edge of the Roe Island Channel near buoy R "16A"; thence in a generally easterly direction running along the southern edge of the Roe Island Channel, Port Chicago Reach and Middle Ground West Reach (points D and E) to point F directly north of the eastern shore boundary (point G); thence 180° to point G on the shore line; thence following the high water shore line in a general westerly direction to the point of beginning.

	Latitude	Longitude
Point A (shoreline) ..	38.0513	- 122.0576
Point B .....	38.0579	- 122.043
Point C .....	38.063	- 122.0307
Point D .....	38.0612	- 122.0204
Point E .....	38.0594	- 122.001
Point F .....	38.0594	- 121.9882
Point G (shoreline)	38.0521	- 121.9882

The datum for these coordinates is North Atlantic Datum (NAD) 83.

\* \* \* \* \*

**Thomas P. Smith,**  
*Chief, Operations and Regulatory Division.*  
[FR Doc. 2023-00380 Filed 1-10-23; 8:45 am]

**BILLING CODE 3720-58-P**

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 52**

[EPA-R04-OAR-2022-0158; FRL-10541-01-R4]

**Air Plan Approval; Tennessee; Eastman Chemical Company Nitrogen Oxides SIP Call Alternative Monitoring**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is proposing to conditionally approve a source-specific

State Implementation Plan (SIP) revision submitted by the State of Tennessee, through the Tennessee Department of Environment and Conservation (TDEC), through a letter dated August 11, 2021, which establishes alternative monitoring and reporting requirements under the Nitrogen Oxides (NO<sub>x</sub>) SIP Call.

**DATES:** Comments must be received on or before February 10, 2023.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-R04-OAR-2022-0158 at [www.regulations.gov](http://www.regulations.gov). Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov*. EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.*, on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit [www2.epa.gov/dockets/commenting-epa-dockets](http://www2.epa.gov/dockets/commenting-epa-dockets).

**FOR FURTHER INFORMATION CONTACT:**

Steven Scofield, Air Regulatory Management Section, Air Planning and Implementation Branch, Air and Radiation Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street SW, Atlanta, Georgia 30303-8960. The telephone number is (404) 562-9034. Mr. Scofield can also be reached via electronic mail at [scofield.steve@epa.gov](mailto:scofield.steve@epa.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Background**

Under Clean Air Act (CAA or Act) section 110(a)(2)(D)(i)(I), also called the good neighbor provision, states are required to address the interstate transport of air pollution. Specifically, the good neighbor provision requires that each state's implementation plan contain adequate provisions to prohibit air pollutant emissions from within the state that will significantly contribute to nonattainment of the national ambient air quality standards (NAAQS), or that

will interfere with maintenance of the NAAQS, in any other state.

On October 27, 1998 (63 FR 57356), EPA finalized the "Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone" (NO<sub>x</sub> SIP Call). The NO<sub>x</sub> SIP Call required eastern states, including Tennessee, to submit SIPs limiting emissions of ozone season NO<sub>x</sub> by implementing statewide emissions budgets. The NO<sub>x</sub> SIP Call addressed the good neighbor provision for the 1979 ozone NAAQS and was designed to mitigate the impact of transported NO<sub>x</sub> emissions, one of the precursors of ozone.<sup>1</sup> EPA developed the NO<sub>x</sub> Budget Trading Program, an allowance trading program that states could adopt to meet their obligations under the NO<sub>x</sub> SIP Call. This trading program allowed the following sources to participate in a regional cap and trade program: generally, electricity generating units (EGUs) with capacity greater than 25 megawatts (MW); and large industrial non-EGUs, such as boilers and combustion turbines, with a rated heat input greater than 250 million British thermal units per hour (MMBtu/hr). The NO<sub>x</sub> SIP Call also identified potential reductions from cement kilns and stationary internal combustion engines.

To comply with the NO<sub>x</sub> SIP Call requirements, in 2000 and 2001, TDEC submitted a revision to add new rule sections to the SIP-approved version of Chapter 1200-3-27, *Nitrogen Oxides*, of the Tennessee Rules. EPA approved the revision as compliant with Phase I of the NO<sub>x</sub> SIP Call in 2004. *See* 69 FR 3015 (January 22, 2004). The approved revision required EGUs and large non-EGUs in the State to participate in the NO<sub>x</sub> Budget Trading Program beginning in 2004. In 2005, Tennessee submitted, and EPA approved, a SIP revision to address additional emissions reductions required for the NO<sub>x</sub> SIP Call under Phase II. *See* 70 FR 76408 (December 27, 2005).

In 2005, EPA published the Clean Air Interstate Rule (CAIR), which required several eastern states, including Tennessee, to submit SIPs that prohibited emissions consistent with revised ozone season NO<sub>x</sub> budgets (as well as annual budgets for NO<sub>x</sub> and sulfur dioxide). *See* 70 FR 25162 (May 12, 2005); *see also* 71 FR 25328 (April

<sup>1</sup> As originally promulgated, the NO<sub>x</sub> SIP Call also addressed good neighbor obligations under the 1997 8-hour ozone NAAQS, but EPA subsequently stayed and later rescinded the rule's provisions with respect to that standard. *See* 65 FR 56245 (September 18, 2000); 84 FR 8422 (March 8, 2019).

28, 2006). CAIR addressed the good neighbor provision for the 1997 ozone NAAQS and 1997 fine particulate matter (PM<sub>2.5</sub>) NAAQS and was designed to mitigate the impact of transported NO<sub>x</sub> emissions with respect to ozone and PM<sub>2.5</sub>. CAIR established several trading programs that EPA implemented through federal implementation plans (FIPs) for EGUs greater than 25 MW in each affected state, but not large non-EGUs; states could submit SIPs to replace the FIPs that achieved the required emission reductions from EGUs and/or other types of sources.<sup>2</sup> When the CAIR trading program for ozone season NO<sub>x</sub> was implemented beginning in 2009, EPA discontinued administration of the NO<sub>x</sub> Budget Trading Program; however, the requirements of the NO<sub>x</sub> SIP Call continued to apply.

On November 25, 2009 (74 FR 61535), EPA approved revisions to Tennessee's SIP that incorporated requirements for CAIR. Consistent with CAIR's requirements, EPA approved a SIP revision in which Tennessee regulations: (1) terminated its NO<sub>x</sub> Budget Trading Program requirements, and (2) incorporated CAIR annual and ozone season NO<sub>x</sub> state trading programs. *See* 74 FR 61535.

Participation of EGUs in the CAIR ozone season NO<sub>x</sub> trading program addressed the State's obligation under the NO<sub>x</sub> SIP Call for those units, and Tennessee also chose to require non-EGUs subject to the NO<sub>x</sub> SIP Call to participate in the same CAIR trading program. In this manner, Tennessee's CAIR rules incorporated into the SIP addressed the State's obligations under the NO<sub>x</sub> SIP Call with respect to both EGUs and non-EGUs.

The United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) initially vacated CAIR in 2008, but ultimately remanded the rule to EPA without vacatur to preserve the environmental benefits provided by CAIR. *See North Carolina v. EPA*, 531 F.3d 896, *modified on rehearing*, 550 F.3d 1176 (D.C. Cir. 2008). The ruling allowed CAIR to remain in effect temporarily until a replacement rule consistent with the court's opinion was developed. While EPA worked on developing a replacement rule, the CAIR program continued to be implemented with the NO<sub>x</sub> annual and ozone season trading programs beginning in 2009 and the SO<sub>2</sub> annual trading program beginning in 2010.

Following the D.C. Circuit's remand of CAIR, EPA promulgated the Cross-

<sup>2</sup> CAIR had separate trading programs for annual sulfur dioxide (SO<sub>2</sub>) emissions, seasonal NO<sub>x</sub> emissions, and annual NO<sub>x</sub> emissions.

State Air Pollution Rule (CSAPR) to replace CAIR and address good neighbor obligations for the 1997 ozone NAAQS, the 1997 PM<sub>2.5</sub> NAAQS, and the 2006 PM<sub>2.5</sub> NAAQS. See 76 FR 48208 (August 8, 2011). Through FIPs, CSAPR required EGUs in eastern states, including Tennessee, to meet annual and ozone season NO<sub>x</sub> emission budgets and annual SO<sub>2</sub> emission budgets implemented through new trading programs. Implementation of CSAPR began on January 1, 2015.<sup>3</sup> CSAPR also contained provisions that would sunset CAIR-related obligations on a schedule coordinated with the implementation of the CSAPR compliance requirements. Participation by a state's EGUs in the CSAPR trading program for ozone season NO<sub>x</sub> generally addressed the state's obligation under the NO<sub>x</sub> SIP Call for EGUs. CSAPR did not initially contain provisions allowing states to incorporate large non-EGUs into that trading program to meet the requirements of the NO<sub>x</sub> SIP Call for non-EGUs. EPA also stopped administering CAIR trading programs with respect to emissions occurring after December 31, 2014.<sup>4</sup>

Even though the CAIR programs have not been implemented in Tennessee since 2014, ozone season NO<sub>x</sub> emissions have remained well below the NO<sub>x</sub> SIP Call budget levels. Through a letter to EPA dated February 27, 2017,<sup>5</sup> Tennessee provided a SIP revision to incorporate a new provision—TACPR 1200–03–27–.12, “NO<sub>x</sub> SIP Call Requirements for Stationary Boilers and Combustion Turbines” (TN 2017 NO<sub>x</sub> SIP Call Rule)—into the SIP. The TN 2017 NO<sub>x</sub> SIP Call Rule established a state control program for sources that are subject to the NO<sub>x</sub> SIP Call, but not covered under CSAPR or the CSAPR Update (background regarding the CSAPR Update is provided later in this document). The TN 2017 NO<sub>x</sub> SIP Call Rule contains several subsections that together comprise a non-EGU control program under which Tennessee will allocate a specified budget of allowances to affected sources. Subsequently, on May 11, 2018, and October 11, 2018, Tennessee submitted letters requesting conditional approval<sup>6</sup>

of the TN 2017 NO<sub>x</sub> SIP Call Rule and committing to provide a SIP revision to EPA by December 31, 2019, to address a deficiency by revising the definition of “affected unit” to remove the unqualified exclusion for any unit that serves a generator that produces power for sale. Based on the State's commitment to submit a SIP revision addressing the identified deficiency, EPA conditionally approved the February 27, 2017, submission. In the same action, EPA approved removal of the State's NO<sub>x</sub> Budget Trading Program and CAIR rules from Tennessee's SIP. See 84 FR 7998 (March 6, 2019).

Tennessee submitted a SIP revision on December 19, 2019, which revised Tennessee Air Pollution Control Regulation (TAPCR) 1200–03–27–.12, “NO<sub>x</sub> SIP Call Requirements for Stationary Boilers and Combustion Turbines” to correct the definition of “affected unit” and to clarify requirements related to stationary boilers and combustion turbines. On March 2, 2021 (86 FR 12092), EPA published a final rule which corrected the definition of “affected unit” and clarified requirements related to stationary boilers and combustion turbines. EPA also converted the conditional approval of the TN 2017 NO<sub>x</sub> SIP Call Rule to a full approval. See EPA's March 2, 2021 (86 FR 12092), final rule for further detail on these changes and EPA's rationale for approving them.

After litigation that reached the Supreme Court, the D.C. Circuit generally upheld CSAPR but remanded several state budgets to EPA for reconsideration. *EME Homer City Generation, L.P. v. EPA*, 795 F.3d 118, 129–30 (D.C. Cir. 2015). EPA addressed the remanded ozone season NO<sub>x</sub> budgets in the Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS (CSAPR Update), which also partially addressed eastern states' good neighbor obligations for the 2008 ozone NAAQS. See 81 FR 74504 (October 26, 2016). The air quality modeling for the CSAPR Update demonstrated that Tennessee contributes significantly to nonattainment and/or interferes with maintenance of the 2008 ozone NAAQS in other states. The CSAPR Update reestablished an option for most states to meet their ongoing obligations for non-EGUs under the NO<sub>x</sub> SIP Call by including the units in the CSAPR Update trading program.

The CSAPR Update trading program replaced the original CSAPR trading program for ozone season NO<sub>x</sub> for most covered states. Tennessee's EGUs participate in the CSAPR Update trading program, which generally also addresses

the State's obligations under the NO<sub>x</sub> SIP Call for EGUs. However, Tennessee elected not to include its large non-EGUs in the CSAPR Update ozone season trading program. Because Tennessee's large non-EGUs do not participate in any CSAPR or CSAPR Update trading program for ozone season NO<sub>x</sub> emissions, the NO<sub>x</sub> SIP Call regulations at 40 CFR 51.121(r)(2), as well as anti-backsliding provisions at 40 CFR 51.905(f) and 40 CFR 51.1105(e), require these non-EGUs to maintain compliance with NO<sub>x</sub> SIP Call requirements in some other way.

Under 40 CFR 51.121(f)(2) of the NO<sub>x</sub> SIP Call regulations, where a state's implementation plan contains control measures for EGUs and large non-EGU boilers and combustion turbines, the SIP must contain enforceable limits on the ozone season NO<sub>x</sub> mass emissions from these sources. In addition, under 40 CFR 51.121(i)(4) of the NO<sub>x</sub> SIP Call regulations as originally promulgated, the SIP also had to require these sources to monitor emissions according to the provisions of 40 CFR part 75, which generally entails the use of continuous emission monitoring systems. Tennessee triggered these requirements by including control measures in its SIP for these types of sources, and the requirements have remained in effect despite the discontinuation of the NO<sub>x</sub> Budget Trading Program after the 2008 ozone season.

On March 8, 2019, EPA revised some of the regulations that were originally promulgated in 1998 to implement the NO<sub>x</sub> SIP Call.<sup>7</sup> The revision gave states covered by the NO<sub>x</sub> SIP Call greater flexibility concerning the form of the NO<sub>x</sub> emissions monitoring requirements that the states must include in their SIPs for certain emissions sources. The revision amended 40 CFR 51.121(i)(4) to make part 75 monitoring, recordkeeping, and reporting optional, such that SIPs may establish alternative monitoring requirements for NO<sub>x</sub> SIP Call budget units that meet the general requirements of 40 CFR 51.121(f)(1) and 51.121(i)(1). Under the updated provision, a state's implementation plan still needs to include some form of emissions monitoring requirements for these types of sources, consistent with the NO<sub>x</sub> SIP Call's general enforceability and monitoring requirements at 40 CFR 51.121(f)(1) and 51.121(i)(1), respectively, but states are no longer required to satisfy these general NO<sub>x</sub> SIP Call requirements

<sup>7</sup> See “Emissions Monitoring Provisions in State Implementation Plans Required Under the NO<sub>x</sub> SIP Call,” 84 FR 8422 (March 8, 2019).

<sup>3</sup> See 79 FR 71663 (December 3, 2014).

<sup>4</sup> See 79 FR 71663 (December 3, 2014) and 81 FR 13275 (March 14, 2016).

<sup>5</sup> EPA notes that it received the submittal on February 28, 2017.

<sup>6</sup> Under CAA section 110(k)(4), EPA may conditionally approve a SIP revision based on a commitment from a state to adopt specific enforceable measures by a date certain, but not later than one year from the date of approval. If the state fails to meet the commitment within one year of the final conditional approval, the conditional approval will be treated as a disapproval.

specifically through the adoption of 40 CFR part 75 monitoring requirements.

Following EPA's March 8, 2019, revision to the NO<sub>x</sub> SIP Call requirements, Eastman petitioned TDEC to adopt revised permit conditions applicable to its Kingsport, Tennessee facility with an alternative monitoring option for this large non-EGU, along with corresponding revised recordkeeping and reporting conditions. This petition resulted in the issuance of the permit for Eastman included as part of TDEC's SIP submittal. The changes allow Eastman to address the NO<sub>x</sub> SIP Call's requirements for enforceable limits on ozone season NO<sub>x</sub> mass emissions through alternative monitoring and reporting methodologies. The August 11, 2021, source-specific SIP revision submitted by TDEC contains the permit provisions that TDEC modified to specifically address the alternative monitoring provisions allowed under the NO<sub>x</sub> SIP Call and requests conditional approval of those provisions into the SIP. The contents of the submittal and EPA's analysis is further discussed in Sections II and III.

## II. Why is EPA proposing this action?

TDEC's August 11, 2021, letter requests that EPA conditionally approve into Tennessee's SIP Tennessee Air Pollution Control Board operating permit No. 077509 for Eastman, state effective on August 11, 2021, to provide alternative NO<sub>x</sub> monitoring and reporting for Natural Gas-Fired Boilers 25–29 (PES B–253–1) at this facility in accordance with 40 CFR 51.121(i). TDEC requests that this approval be conditioned on Tennessee's commitment to modify the provisions at chapter 1200–03–27.12(11) to specify permissible alternative monitoring and reporting methodologies for large industrial non-EGUs subject to the NO<sub>x</sub> SIP Call, such as the alternative monitoring and reporting provisions in permit No. 077509. The submission also includes a demonstration under CAA section 110(l) intended to show that the revision would not interfere with any applicable requirement concerning attainment and reasonable further progress or any other applicable requirement of the CAA. As discussed later in this document, EPA has reviewed these changes, preliminarily finds them to be consistent with the CAA and regulations governing the NO<sub>x</sub> SIP Call, and is proposing to conditionally approve the revisions to incorporate the source-specific SIP revision into the State's implementation plan.

## III. Analysis of Tennessee's Submission

On September 17, 2019, Eastman submitted a petition to request approval of alternative monitoring, recordkeeping, and reporting requirements for five boilers subject to the NO<sub>x</sub> SIP Call (Boilers 25, 26, 27, 28, and 29) at Eastman's B–253 powerhouse. The petition states that NO<sub>x</sub> emission rates from Eastman's B–253 boilers, which were converted from coal to natural gas operation between 2013 and 2018, are approximately 20% of the pre-conversion NO<sub>x</sub> emission rates. As a result, Eastman operates with a substantial margin of compliance relative to the facility's NO<sub>x</sub> allocation of 3,047 tons.<sup>8</sup> The petition states that Eastman emitted 70% of its allocation during the 2018 ozone season. The petition also notes that if Boiler 26 had been converted to gas for the 2018 control period, Eastman would have emitted approximately 60% of its allocation. The petition indicates that these boilers burn only pipeline quality natural gas and that the units have had similar average NO<sub>x</sub> emission rates from 2016–2020. Specifically, the petition requested that Eastman be permitted to demonstrate compliance with Tennessee Rule 1200–03–27–.12 by monitoring NO<sub>x</sub> emissions from PES B–253–1, Boilers 25 through 29, using the monitoring methodology for NO<sub>x</sub> emission rate set forth in 40 CFR part 75, appendix E.

That petition resulted in TDEC's issuance of operating permit No. 077509 to address NO<sub>x</sub> SIP Call requirements and to adopt an alternative monitoring option (along with corresponding recordkeeping and reporting requirements) for this large non-EGU. Condition 1 of operating permit No. 077509 allows Eastman to use the alternative NO<sub>x</sub> monitoring provisions in Condition 2 in lieu of the requirements established by TAPCR 1200–03–27–.12(11)(a). Condition 2 provides that Eastman may demonstrate compliance with Tennessee Rule 1200–03–27–.12 by monitoring NO<sub>x</sub> emissions from PES B 253–1, Boilers 25 through 29, using the monitoring methodologies set forth in 40 CFR part 75, appendices D and E, except that the units shall not be required to meet the definition of a “peaking unit” under 40 CFR 72.2 as otherwise required under 40 CFR part 75, appendix E, section 1.1. Appendix E generally includes

<sup>8</sup> Additional information about how this NO<sub>x</sub> budget allocation was developed is available within the proposed rule to adopt this budget into the Tennessee's SIP at 83 FR 64497 (December 17, 2018) and the final rule adopting this budget allocation into Tennessee's SIP at 86 FR 12092 (March 2, 2021).

requirements for performance testing, periodic re-testing, procedures for determining the hourly NO<sub>x</sub> rate, quality assurance standards, recordkeeping requirements, and reporting requirements.<sup>9</sup> These revised permit conditions are consistent with the flexibility provided to states on March 8, 2019 (84 FR 8422) concerning the form of the NO<sub>x</sub> emissions monitoring requirements that the states must include in their SIPs for certain emissions sources, such as Eastman, to comply with the NO<sub>x</sub> SIP Call.

Section 110(l) of the CAA prohibits revision of a SIP that would interfere with attainment or maintenance of a NAAQS, reasonable further progress toward attainment of a NAAQS, or any other applicable requirement of the CAA. In its submittal, TDEC includes a demonstration in accordance with section 110(l) of the CAA that the proposed revision would not interfere with any applicable requirement concerning attainment and reasonable further progress, or any other applicable requirement of the CAA. Tennessee's demonstration concludes that the proposed changes are compliant with section 110(l) of the CAA because: (1) NO<sub>x</sub> emissions from Eastman's affected units, including B–253 Boilers 25 through 29, are substantially below the facility's NO<sub>x</sub> budget established pursuant to TAPCR 1200–03–27–.12, and the change would not result in an increase in NO<sub>x</sub> emissions; (2) the proposed monitoring alternative would not alter the NO<sub>x</sub> SIP Call budget that limits emissions from the affected unit; (3) the alternative monitoring requirements would be permanent, enforceable, and sufficient to determine whether the source is in compliance with the NO<sub>x</sub> SIP Call emissions requirements; and (4) the work practice requirements of 40 CFR 63, subpart DDDDD (periodic tune-ups) will provide additional assurance that the boilers are operating properly. EPA agrees with Tennessee's rationale summarized above and the conclusion that the proposed revision would not interfere with any applicable requirement concerning attainment and reasonable further progress, or any other applicable requirement of the CAA.

In order to address the requirements of the NO<sub>x</sub> SIP Call for sources that are not covered under a CSAPR trading program for ozone season NO<sub>x</sub> emissions, SIP revisions must provide for enforceable emissions limitations

<sup>9</sup> 40 CFR part 75, appendix D is also referred to in Condition 2 operating permit No. 077509 because 40 CFR part 75, appendix E cross-references appendix D's methodology to determine heat input values.

and require emissions monitoring consistent with the NO<sub>x</sub> SIP Call's general enforceability and monitoring requirements.<sup>10</sup> See 40 CFR 51.121(f)(2). EPA is proposing to find that TDEC's submittal meets these requirements and all other requirements of the CAA, including 40 CFR 51.121(i)(1) and (4), except that Tennessee additionally will need to modify TAPCR 1200-03-27.12(11) to specify permissible alternative monitoring and reporting methodologies within one year of the effective date of EPA's conditional approval. Thus, EPA is proposing to conditionally approve TDEC operating permit No. 077509, state effective on August 11, 2021, into Tennessee's SIP pursuant to CAA section 110(k)(4), subject to TDEC's specific commitment to modify the provisions of TAPCR 1200-03-27.12(11) to specify permissible alternative monitoring and reporting methodologies within one year of EPA's conditional approval, as described in TDEC's submittal.

If Tennessee meets its commitment to submit a SIP revision modifying the provisions of TAPCR 1200-03-27.12(11) to specify permissible alternative monitoring and reporting methodologies, as allowed under 40 CFR 51.121(i)(1) and (4), by 12 months from the date of final approval of this proposed action, TDEC operating permit No. 077509 will remain a part of the SIP. However, if the State fails to submit this revision on or before 12 months from the date of final approval of this action, the conditional approval will become a disapproval pursuant to CAA section 110(k)(4).

#### IV. Incorporation by Reference

In this document, EPA is proposing to include in a final EPA rule regulatory text that includes incorporation by reference. In accordance with the requirements of 1 CFR 51.5, and as discussed in Sections I through III of this preamble, EPA is proposing to incorporate by reference Tennessee Air Pollution Control Board's operating permit No. 077509 for the Eastman Chemical Company, state effective on August 11, 2021. EPA has made, and will continue to make, these materials generally available through [www.regulations.gov](http://www.regulations.gov) and at the EPA Region 4 Office (please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section of this preamble for more information).

#### V. Proposed Action

EPA is proposing to conditionally approve Tennessee Air Pollution

Control Board operating permit No. 077509 for the Eastman Chemical Company, state effective August 11, 2021 for incorporation into the Tennessee SIP. These changes were submitted by Tennessee on August 11, 2021.

#### VI. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the CAA and applicable Federal regulations. See 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the CAA. This proposed action merely proposes to conditionally approve state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this proposed action:

- Is not a significant regulatory action subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Does not impose information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4);
- Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA; and
- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

The SIP is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the proposed rule does not have tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), nor will it impose substantial direct costs on tribal governments or preempt tribal law.

#### List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Nitrogen dioxide, Ozone, Reporting and recordkeeping requirements.

(Authority: 42 U.S.C. 7401 *et seq.*)

Dated: December 30, 2022.

**Daniel Blackman,**

*Regional Administrator, Region 4.*

[FR Doc. 2022-28656 Filed 1-10-23; 8:45 am]

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## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Part 52

[EPA-R09-OAR-2022-0957; FRL-10543-01-R9]

### Partial Approval, Conditional Approval, and Partial Disapproval of Air Quality State Implementation Plans; Nevada; Infrastructure Requirements for Ozone

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** The EPA is proposing to approve in part, conditionally approve in part, and disapprove in part a state implementation plan (SIP) revision submitted by the State of Nevada pursuant to the requirements of the Clean Air Act (CAA or "Act") for the implementation, maintenance, and enforcement of the 2015 national ambient air quality standards (NAAQS) for ozone. As part of this action, we are proposing to reclassify a region of the State for emergency episode planning purposes with respect to ozone. Finally, we are proposing to approve a regulatory revision into the Nevada SIP. We are taking comments on this proposal and, after considering any comments submitted, plan to take final action.

**DATES:** Written comments must be received on or before February 10, 2023.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-R09-OAR-2022-0957 at <https://www.regulations.gov>. For comments

<sup>10</sup> See 40 CFR 51.121(f)(2)(ii) and 51.121(i)(4).



submitted at *Regulations.gov*, follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov*. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.*, on the web, cloud, or other file sharing system). For additional submission methods, please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section. For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>. If you need assistance in a language other than English or if you are a person with disabilities who needs a reasonable accommodation at no cost to you, please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section.

**FOR FURTHER INFORMATION CONTACT:** Nicole Law, Air Planning Office (AIR-2), U.S. Environmental Protection Agency, Region IX, (415) 947-4126, [Law.Nicole@epa.gov](mailto:Law.Nicole@epa.gov).

**SUPPLEMENTARY INFORMATION:**

Throughout this document, the terms “we,” “us,” and “our” refer to EPA.

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**I. The EPA’s Approach to the Review of Infrastructure SIP Submissions**

The EPA is proposing action on a SIP submittal from Nevada that addresses the infrastructure requirements of CAA sections 110(a)(1) and 110(a)(2) for the 2015 ozone NAAQS. The requirement for states to submit a SIP revision of this type arises out of CAA section 110(a)(1). Pursuant to section 110(a)(1), states must make SIP submittals “within 3 years (or such shorter period as the Administrator may prescribe) after the promulgation of a national primary ambient air quality standard (or any revision thereof),” and these SIP submittals are to provide for the “implementation, maintenance, and enforcement” of such NAAQS. The statute directly imposes on states the duty to make these SIP submittals, and the requirement to make the submittals is not conditioned upon the EPA’s taking any action other than promulgating a new or revised NAAQS. Section 110(a)(2) includes a list of specific elements that “[e]ach such plan” submittal must address.

The EPA has historically referred to these SIP submittals made for the purpose of satisfying the requirements of CAA sections 110(a)(1) and 110(a)(2) as “infrastructure SIP” submittals. Although the term “infrastructure SIP” does not appear in the CAA, the EPA uses the term to distinguish this particular type of SIP submittal from submittals that are intended to satisfy other SIP requirements under the CAA, such as “nonattainment SIP” or “attainment SIP” submittals to address the nonattainment planning requirements of part D of title I of the CAA, “regional haze SIP” submittals required to address the visibility protection requirements of CAA section 169A, and nonattainment new source review (NSR) permit program submittals to address the permit requirements of CAA, title I, part D.

Historically, the EPA has elected to use guidance documents to make recommendations to states for infrastructure SIPs, in some cases conveying needed interpretations on newly arising issues and in other cases conveying interpretations that have already been developed and applied to individual SIP submittals for particular elements.<sup>1</sup> The EPA most recently

<sup>1</sup> We note, however, that nothing in the CAA requires the EPA to provide guidance or to promulgate regulations for infrastructure SIP submittals. The CAA directly applies to states and requires the submittal of infrastructure SIP submittals, regardless of whether or not the EPA provides guidance or regulations pertaining to such submittals. The EPA elects to issue such guidance in order to assist states, as appropriate.

issued guidance for infrastructure SIPs on September 13, 2013 (“2013 Infrastructure SIP Guidance”).<sup>2</sup> The EPA developed this document to provide states with up-to-date guidance for infrastructure SIPs for any new or revised NAAQS. Within this guidance, the EPA describes the duty of states to make infrastructure SIP submittals to meet basic structural SIP requirements within three years of promulgation of a new or revised NAAQS. The EPA also made recommendations about many specific subsections of section 110(a)(2) that are relevant in the context of infrastructure SIP submittals.<sup>3</sup> The guidance also discusses the substantively important issues that are germane to certain subsections of section 110(a)(2). Significantly, the EPA interprets sections 110(a)(1) and 110(a)(2) such that infrastructure SIP submittals need to address certain issues and need not address others. Accordingly, the EPA reviews each infrastructure SIP submittal for compliance with the applicable statutory provisions of section 110(a)(2), as appropriate.

As an example, section 110(a)(2)(E)(ii) is a required element of section 110(a)(2) for infrastructure SIP submittals. Under this element, a state must meet the substantive requirements of section 128, which pertain to state boards that approve permits or enforcement orders and heads of executive agencies with similar powers. Thus, the EPA reviews infrastructure SIP submittals to ensure that the state’s SIP appropriately addresses the requirements of section 110(a)(2)(E)(ii) and section 128. The 2013 Infrastructure SIP Guidance explains the EPA’s interpretation that there may be a variety of ways by which states can appropriately address these substantive statutory requirements, depending on the structure of an individual state’s permitting or enforcement program (*e.g.*, whether permits and enforcement

<sup>2</sup> “Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 110(a)(2),” Memorandum from Stephen D. Page, September 13, 2013.

<sup>3</sup> The EPA’s September 13, 2013, guidance did not make recommendations with respect to infrastructure SIP submittals to address section 110(a)(2)(D)(i)(I). The EPA issued the guidance shortly after the U.S. Supreme Court agreed to review the D.C. Circuit decision in *EME Homer City*, 696 F.3d7 (D.C. Cir. 2012) which had interpreted the requirements of section 110(a)(2)(D)(i)(I). In light of the uncertainty created by ongoing litigation, the EPA elected not to provide additional guidance on the requirements of section 110(a)(2)(D)(i)(I) at that time. As the guidance is neither binding nor required by statute, whether the EPA elects to provide guidance on a particular section has no effect on a state’s CAA obligations.

orders are approved by a multi-member board or by a head of an executive agency). However they are addressed by the state, the substantive requirements of section 128 are necessarily included in the EPA's evaluation of infrastructure SIP submittals because section 110(a)(2)(E)(ii) explicitly requires that the state satisfy the provisions of section 128.

As another example, the EPA's review of infrastructure SIP submittals with respect to the PSD program requirements in sections 110(a)(2)(C), (D)(i)(II), and (J) focuses upon the structural PSD program requirements contained in part C, title I of the Act and the EPA's PSD regulations. Structural PSD program requirements include provisions necessary for the PSD program to address all regulated sources and regulated NSR pollutants, including greenhouse gases (GHGs). By contrast, structural PSD program requirements do not include provisions that are not required under EPA's regulations at 40 Code of Federal Regulations (CFR) 51.166 but are merely available as an option for the state, such as the option to provide grandfathering of complete permit applications with respect to the 2012 NAAQS for particulate matter of 2.5 micrometers or less (PM<sub>2.5</sub>). Accordingly, the latter optional provisions are types of provisions the EPA considers irrelevant in the context of an infrastructure SIP action.

For other section 110(a)(2) elements, however, the EPA's review of a state's infrastructure SIP submittal focuses on assuring that the state's SIP meets basic structural requirements. For example, section 110(a)(2)(C) includes, *inter alia*, the requirement that states have a program to regulate minor new sources. Thus, the EPA evaluates whether the state has a SIP-approved minor NSR program and whether the program addresses the pollutants relevant to that NAAQS. In the context of acting on an infrastructure SIP submittal, however, the EPA does not think it is necessary to conduct a review of each and every provision of a state's existing minor source program (*i.e.*, already in the existing SIP) for compliance with the requirements of the CAA and the EPA's regulations that pertain to such programs.

With respect to certain other issues, the EPA does not believe that an action on a state's infrastructure SIP submittal is necessarily the appropriate type of action in which to address possible deficiencies in a state's existing SIP. These issues include existing provisions related to "director's variance" or "director's discretion" that may be contrary to the CAA because they

purport to allow revisions to SIP-approved emissions limits while limiting public process or not requiring further approval by the EPA and existing provisions for PSD programs that may be inconsistent with current requirements of the EPA's "Final NSR Improvement Rule," 67 FR 80186, December 31, 2002, as amended by 72 FR 32526, June 13, 2007 ("NSR Reform"). Thus, the EPA believes it may approve an infrastructure SIP submittal without scrutinizing the totality of the existing SIP for such potentially deficient provisions and may approve the submittal even if it is aware of such existing provisions.<sup>4</sup> It is important to note that the EPA's approval of a state's infrastructure SIP submittal should not be construed as explicit or implicit re-approval of any existing potentially deficient provisions that relate to the three specific issues just described.

The EPA's approach to the review of infrastructure SIP submittals is to identify the CAA requirements that are logically applicable to that submittal. The EPA believes that this approach to the review of a particular infrastructure SIP submittal is appropriate, because it would not be reasonable to read the general requirements of section 110(a)(1) and the list of elements in 110(a)(2) as requiring review of each and every provision of a state's existing SIP against all requirements in the CAA and the EPA regulations merely for purposes of assuring that the state in question has the basic structural elements for a functioning SIP for a new or revised NAAQS. Because SIPs have grown by accretion over the decades as statutory and regulatory requirements under the CAA have evolved, they may include some outmoded provisions and historical artifacts. These provisions, while not fully up to date, nevertheless may not pose a significant problem for the purposes of "implementation, maintenance, and enforcement" of a new or revised NAAQS when the EPA evaluates adequacy of the infrastructure SIP submittal. The EPA believes that a better approach is for states and the EPA to focus attention on those elements of section 110(a)(2) of the CAA most likely to warrant a specific SIP revision due to the promulgation of a new or revised NAAQS or other factors.

For example, the EPA's 2013 Infrastructure SIP Guidance gives

<sup>4</sup> By contrast, the EPA notes that if a state were to include a new provision in an infrastructure SIP submittal that contained a legal deficiency, such as a new exemption for excess emissions during SSM events, then the EPA would need to evaluate that provision for compliance against the rubric of applicable CAA requirements in the context of the action on the infrastructure SIP.

simpler recommendations with respect to carbon monoxide than other NAAQS pollutants to meet the visibility requirements of section 110(a)(2)(D)(i)(II), because carbon monoxide does not affect visibility. As a result, an infrastructure SIP submittal for any future new or revised NAAQS for carbon monoxide need only state this fact in order to address the visibility prong of section 110(a)(2)(D)(i)(II).

Finally, the EPA believes that its approach with respect to infrastructure SIP requirements is based on a reasonable reading of sections 110(a)(1) and 110(a)(2) because the CAA provides other avenues and mechanisms to address specific substantive deficiencies in existing SIPs. These other statutory tools allow the EPA to take appropriately tailored action, depending upon the nature and severity of the alleged SIP deficiency. Section 110(k)(5) authorizes the EPA to issue a "SIP call" whenever the Agency determines that a state's SIP is substantially inadequate to attain or maintain the NAAQS, to mitigate interstate transport, or to otherwise comply with the CAA.<sup>5</sup> Section 110(k)(6) authorizes the EPA to correct errors in past actions, such as past approvals of SIP submittals.<sup>6</sup> Significantly, the EPA's determination that an action on a state's infrastructure SIP submittal is not the appropriate time and place to address all potential existing SIP deficiencies does not preclude the EPA's subsequent reliance on provisions in section 110(a)(2) as part of the basis for action to correct those deficiencies at a later time. For example, although it may not be appropriate to require a state to eliminate all existing inappropriate director's discretion provisions in the course of acting on an infrastructure SIP submittal, the EPA believes that section 110(a)(2)(A) may be among the statutory bases that the EPA relies upon in the

<sup>5</sup> For example, the EPA issued a SIP call to Utah to address specific existing SIP deficiencies related to the treatment of excess emissions during SSM events. See "Finding of Substantial Inadequacy of Implementation Plan; Call for Utah State Implementation Plan Revisions," 76 FR 21639, April 18, 2011.

<sup>6</sup> The EPA has used this authority to correct errors in past actions on SIP submittals related to PSD programs. See "Limitation of Approval of Prevention of Significant Deterioration Provisions Concerning Greenhouse Gas Emitting-Sources in State Implementation Plans; Final Rule," 75 FR 82536, December 30, 2010. The EPA has previously used its authority under CAA section 110(k)(6) to remove numerous other SIP provisions that the Agency determined it had approved in error. See, e.g., 61 FR 38664, July 25, 1996 and 62 FR 34641, June 27, 1997 (corrections to American Samoa, Arizona, California, Hawaii, and Nevada SIPs); 69 FR 67062, November 16, 2004 (corrections to California SIP); and 74 FR 57051, November 3, 2009 (corrections to Arizona and Nevada SIPs).

course of addressing such deficiency in a subsequent action.<sup>7</sup>

**II. Background**

**A. Statutory Framework**

Section 110(a)(2) includes a list of specific elements that “[e]ach such plan” submission must include. The infrastructure SIP elements required by section 110(a)(2) are as follows:

- Section 110(a)(2)(A): Emission limits and other control measures.
- Section 110(a)(2)(B): Ambient air quality monitoring/data system.
- Section 110(a)(2)(C): Program for enforcement of control measures and regulation of new and modified stationary sources.
- Section 110(a)(2)(D)(i): Interstate pollution transport.
- Section 110(a)(2)(D)(ii): Interstate pollution abatement and international air pollution.
- Section 110(a)(2)(E): Adequate resources and authority, conflict of interest, and oversight of local government and regional agencies.
- Section 110(a)(2)(F): Stationary source monitoring and reporting.
- Section 110(a)(2)(G): Emergency episodes.
- Section 110(a)(2)(H): SIP revisions.
- Section 110(a)(2)(I): Consultation with government officials, public notification, PSD, and visibility protection.

- Section 110(a)(2)(K): Air quality modeling and submittal of modeling data.

- Section 110(a)(2)(L): Permitting fees.

- Section 110(a)(2)(M): Consultation and participation by affected local entities.

Two elements identified in section 110(a)(2) are not governed by the three-year submittal deadline of section 110(a)(1) and are therefore not addressed in this action. These two elements are: Section 110(a)(2)(C) to the extent it refers to permit programs required under part D (nonattainment NSR), and Section 110(a)(2)(I), pertaining to the nonattainment planning requirements of part D. As a result, this action does not address requirements for the nonattainment NSR portion of section 110(a)(2)(C) or the whole of section 110(a)(2)(I).

**B. Regulatory History**

On October 26, 2015, the EPA promulgated a revised NAAQS for ozone, (“the 2015 ozone NAAQS”), triggering a requirement for states to submit infrastructure SIPs within three years of promulgation of the revised NAAQS. The 2015 ozone NAAQS revised the 2008 8-hour ozone NAAQS by lowering the primary and secondary

8-hour ozone standards from 75 parts per billion (ppb) to 70 ppb.<sup>8</sup>

**III. State Submittal**

**A. Infrastructure SIP Submittal**

The Nevada Division of Environmental Protection (NDEP) submitted a SIP revision addressing the infrastructure SIP requirements for the 2015 ozone NAAQS on September 28, 2018 (“Nevada’s Infrastructure SIP Submittal”).<sup>9</sup> It included separate sections for Clark County<sup>10</sup> and Washoe County.<sup>11</sup> We refer to each individual section as that agency’s or County’s portion of the submittal. In accordance with CAA section 110(k)(1)(B), the infrastructure SIP became complete by operation of law on March 28, 2019.

As noted in each respective portion of the submittal, NDEP, Clark County, and Washoe County all provided public notice and an opportunity for public comment prior to finalizing each portion of the infrastructure SIP submittal. Additionally, each agency either held or offered to hold a public hearing as part of the public notice and comment period. Notice, hearing, and adoption dates for each portion of the submittal are shown in Table 1. We find that these submittals meet the procedural requirements for public participation under CAA section 110(a)(2) and 40 CFR 51.102.

**TABLE 1—NOTIFICATION AND OPPORTUNITIES FOR PUBLIC COMMENT ON THE NEVADA SIP**

Agency	Submittal	Start of public notice	Hearing date	Adoption date
NDEP .....	The Nevada Division of Environmental Protection Portion of the Nevada State Implementation Plan for the 2015 Ozone NAAQS: Demonstration of Adequacy.	July 19, 2018 .....	None <sup>a</sup> .....	August 29, 2018.
Clark County Board of Commissioners.	The Clark County Portion of the State Implementation Plan to Meet the Ozone Infrastructure SIP Requirements of Clean Air Act Section 110(a)(2).	July 2, 2018 .....	August 21, 2018	August 21, 2018.
Washoe County District Board of Health.	The Washoe County Portion of the Nevada State Implementation Plan to Meet the Ozone Infrastructure SIP Requirements of Clean Air Act Section 110(a)(2).	June 20, 2018 ....	July 26, 2018 .....	July 26, 2018.

<sup>a</sup> The hearing was tentatively scheduled for August 29, 2018, but cancelled because no one requested a hearing.

<sup>7</sup> See, e.g., the EPA’s disapproval of a SIP submittal from Colorado on the grounds that it would have included a director’s discretion provision inconsistent with CAA requirements, including section 110(a)(2)(A). See, e.g., 75 FR 42342 at 42344, July 21, 2010 (proposed disapproval of director’s discretion provisions); 76 FR 4540, January 26, 2011 (final disapproval of such provisions).

<sup>8</sup> 80 FR 65292 (October 26, 2015).

<sup>9</sup> Although NDEP submitted Nevada’s Infrastructure SIP Submittal electronically on September 28, 2018, the submittal letter is dated October 1, 2018, from Greg Lovato, Administrator, Nevada Division of Environmental Protection, to Mike Stoker, Regional Administrator, U.S. EPA Region IX, RE: “The Nevada State Implementation Plan for the 2015 Primary and Secondary Ozone NAAQS.”

<sup>10</sup> Letter dated September 12, 2018, from Marci Henson, Director, Clark County Department of Air

Quality, to Greg Lovato, Administrator, Nevada Division of Environmental Protection, RE: “Clark County Portion of the Nevada Infrastructure State Implementation Plan for the 2015 Ozone NAAQS.”

<sup>11</sup> Letter dated August 28, 2018, from Charlene Albee, Director, Washoe County Health District Air Quality Management Division, to Greg Lovato, Administrator, Nevada Division of Environmental Protection, Subject: “2015 Ozone National Ambient Air Quality Standard Infrastructure State Implementation Plan (SIP).”

### B. Revised Rule

In Nevada's Infrastructure SIP Submittal, NDEP included a revised version of Nevada Administrative Code (NAC) 445B.22097 for incorporation into the Nevada SIP.<sup>12</sup> For the revised rule, NDEP included documentation of the public comment period; the public hearing on February 21, 2018; and proof adoption by the State Environmental Commission.

#### 1. What Rule Did the State Submit

NDEP adopted an amendment to NAC 445B.22097, "Standards of quality for ambient air" on February 21, 2018 and submitted it to the EPA on September 28, 2018. On October 20, 2022, the EPA proposed approval into the SIP of a version of the rule adopted on October 27, 2015.<sup>13</sup> A revision to NAC 445B.22097 was last approved into the SIP on March 27, 2006.<sup>14</sup>

#### 2. What Is the Purpose of the Submitted Rule Revision

The regulation was amended "to align [Nevada's regulations] with the national ambient air quality standards (NAAQS) currently in effect."<sup>15</sup> The change to NAC 445B.22097 submitted with Nevada's Infrastructure SIP Submittal would lower the State's 8-hour ozone standard from 0.075 to 0.070 parts per million (ppm), consistent with the 2015 Ozone NAAQS.

### C. Commitment Letters

In addition to the submittals identified in Table 1, NDEP and Washoe County submitted letters committing to develop, adopt, and submit rules meeting the public notice requirements of CAA section 127, which are cross-referenced in CAA section 110(a)(2)(f), within one year of our final action conditionally approving both agencies for the requirement.<sup>16</sup> CAA section 127

<sup>12</sup> See Enclosure NDEP 2015 Ozone NAAQS Infrastructure SIP, October 1, 2018, Nevada Division of Environmental Protection Proof of Adoption of the 2015 Ozone Standard into the Nevada Administrative Code (NAC) for Approval into the Applicable Nevada SIP.

<sup>13</sup> 87 FR 63744 (October 20, 2022).

<sup>14</sup> 71 FR 15040 (March 27, 2006).

<sup>15</sup> Department of Conservation and Natural Resources, which includes the Nevada Division of Environmental Protection, State Environmental Commission, Notice of Regulatory Hearing Adoption of Regulations and Other Matters Before the State Environmental Commission Public Notice, SEC Public Hearing February 21, 2018.

<sup>16</sup> Letter dated September 9, 2022, from Greg Lovato, Administrator Nevada Division of Environmental Protection, to Martha Guzman, Regional Administrator, U.S. EPA Region IX, Re: "Request for Conditional Approval of Nevada's Infrastructure State Implementation Plan for the 2012 PM<sub>2.5</sub> and 2015 Ozone National Ambient Air Quality Standards." and Letter dated September 2, 2022, from Greg Lovato, Administrator Nevada

requires that each state's EPA-approved SIP contain measures to notify the public of instances where any NAAQS is exceeded, advise the public of health hazards related to any exceedance, and provide information on ways to prevent such standards from being exceeded in the future. While NDEP and Washoe County provide notifications to the public in the event of a NAAQS exceedance, neither agency's EPA-approved SIP contains measures requiring such notifications. CAA section 110(k)(4) authorizes the EPA to conditionally approve a plan revision based on a commitment by the state to adopt specific enforceable measures by a date certain but not later than one year after the date of the plan approval.

### IV. The EPA's Evaluation and Proposed Action

#### A. Proposed Approvals and Partial Approvals

##### 1. Infrastructure SIP

We have evaluated Nevada's Infrastructure SIP Submittal and the existing provisions of the Nevada SIP for compliance with the infrastructure SIP requirements (or "elements") of CAA section 110(a)(2) and applicable regulations in 40 CFR part 51 ("Requirements for Preparation, Adoption, and Submittal of State Implementation Plans"). The Technical Support Document (TSD), available in the docket to this proposed rulemaking, includes our evaluation of all of the elements and rationale for our proposed action, as well as our evaluation of various statutory and regulatory provisions. For some requirements, we refer to prior notices and TSDs for Nevada Infrastructure SIP submissions, which are included in the docket for this rulemaking.

Based on the analysis in this document and discussed in detail in our TSD, we propose to approve Nevada's Infrastructure SIP Submittal with respect to the following Clean Air Act requirements:<sup>17</sup>

- 110(a)(2)(A): Emission limits and other control measures.

Division of Environmental Protection to Martha Guzman, Regional Admin. Re: Nevada's Infrastructure State Implementation Plan for the 2012 PM<sub>2.5</sub> National Ambient Air Quality Standard dated September 9, 2022 that enclosed the letter from Francisco Vega, Director, Air Quality Management Division, Washoe County Health Division to Greg Lovato, Administrator, Nevada Division of Environmental Protection and Martha Guzman, EPA, Re: "Request for Conditional Approval of Nevada's Infrastructure State Implementation Plan for the 2012 PM<sub>2.5</sub> and 2015 Ozone National Ambient Air Quality Standards."

<sup>17</sup> All approvals are full approvals for NDEP, Clark County, and Washoe County except where noted otherwise.

- 110(a)(2)(B): Ambient air quality monitoring/data system.
- 110(a)(2)(C) (in part): Program for enforcement of control measures (full approval), and regulation of new stationary sources (approval for Clark County only) and minor sources (full approval).
- 110(a)(2)(D) (in part, see below): Interstate Pollution Transport.
  - 110(a)(2)(D)(i)(II) (in part)—interference with PSD (prong 3) (approval for Clark County only).
  - 110(a)(2)(D)(ii) (in part)—interstate pollution abatement (approval for Clark County only) and international air pollution.
- 110(a)(2)(E): Adequate resources and authority, conflict of interest, and oversight of local governments and regional agencies.
- 110(a)(2)(F): Stationary source monitoring and reporting.
- 110(a)(2)(G): Emergency episodes.
- 110(a)(2)(H): SIP revisions.
- 110(a)(2)(J) (in part): Consultation with government officials, public notification (conditional approval for NDEP and Washoe County, full approval for Clark County), and PSD and visibility protection (full approval for Clark County only).
- 110(a)(2)(K): Air quality modeling and submission of modeling data.
- 110(a)(2)(L): Permitting fees.
- 110(a)(2)(M): Consultation/participation by affected local entities.

##### 2. Proposed Approval of State Provisions Into the Nevada SIP

As part of our proposed approval of Nevada's Infrastructure SIP Submittal, we are also proposing to approve a state regulation into the Nevada SIP. Specifically, we propose to approve into the SIP a new version of NAC 445B.22097, which revises the 8-hour ozone standard in the Nevada standards table from 0.075 to 0.070 parts per million (ppm) to be consistent with the 2015 ozone NAAQS and deletes the "National Standards" and "Method" columns because both are for reference only and are often out-of-date compared to the referenced federal regulations.

As a general matter, rules in the SIP must be enforceable (see CAA section 110(a)(2)), must not interfere with applicable requirements concerning attainment and reasonable further progress or other CAA requirements (see CAA section 110(l)), and must not modify certain SIP control requirements in nonattainment areas without ensuring equivalent or greater emissions reductions (see CAA section 193). We have evaluated NDEP's revised rule for compliance with CAA requirements for SIPs, set forth in CAA section 110(a)(2),

and for compliance with CAA requirements for SIP revisions in CAA sections 110(l) and 193. In general, the rule strengthens the SIP, as discussed in section III.B.2. of this document. Based upon our analysis, we propose to find NAC 445B.22097 meets the requirements of CAA sections 110(a)(2), 110(l), and 193. Therefore, the EPA is proposing to approve the submitted revision to NAC 445B.22097 into the Nevada SIP.

### B. Conditional Approvals

#### 1. Conditional Approvals

CAA section 110(k)(4) authorizes the EPA to conditionally approve a plan revision based on a commitment by the state to adopt specific enforceable measures by a date certain but not later than one year after the date of the plan approval. In letters dated September 2, 2022 and September 9, 2022, NDEP and Washoe County committed to adopt and submit specific enforceable measures to address the identified deficiencies under CAA section 110(a)(2)(f) discussed in Sections III.C. and IV.A. of this proposed rulemaking and in our TSD.<sup>18</sup> Accordingly, pursuant to section 110(k)(4) of the Act, the EPA is proposing a conditional approval of the NDEP and Washoe County portions of Nevada's Infrastructure SIP Submittal addressing the public notification requirements of CAA section 110(a)(2)(f) for the 2015 Ozone NAAQS.

If NDEP and Washoe County meet their commitments to submit the required revisions within 12 months of the EPA's final action on this SIP submittal, and the EPA approves the submission, then the deficiencies listed above will be cured. However, if NDEP and/or Washoe County fail to submit these revisions within the required timeframe, the conditional approvals shall become disapprovals.

### C. Proposed Partial Disapprovals

The EPA proposes to disapprove Nevada's Infrastructure SIP Submittal with respect to the following infrastructure SIP requirements:

- 110(a)(2)(C) (in part): Regulation of new and modified stationary sources (disapproval for NDEP and Washoe County).
- 110(a)(2)(D)(i)(II) (in part): interference with PSD (prong 3) (disapproval for NDEP and Washoe County).

<sup>18</sup> Clark County has satisfied this requirement through Air Quality Regulation 4.5, approved into the SIP in a rule published on April 21, 2022 (87 FR 23765).

- 110(a)(2)(D)(ii) (in part): interstate pollution abatement (disapproval for NDEP and Washoe County).

- 110(a)(2)(f) (in part): PSD (disapproval for NDEP and Washoe County).

As explained more fully in our TSD, we are proposing to disapprove the NDEP and Washoe County portions of Nevada's Infrastructure SIP Submittal with respect to the PSD-related requirements of sections 110(a)(2)(C), 110(a)(2)(D)(i)(II), 110(a)(2)(D)(ii), and 110(a)(2)(f). The Nevada SIP does not fully satisfy the statutory and regulatory requirements for PSD permit programs under part C, title I of the Act, because NDEP and Washoe County do not currently have SIP-approved PSD programs. Although the NDEP and Washoe County portions of the SIP remain deficient with respect to PSD requirements, there would be no further consequences if the action is finalized as proposed, as both agencies already implement the federal PSD program at 40 CFR 52.21 for all regulated NSR pollutants, pursuant to delegation agreements with the EPA.<sup>19</sup>

### D. Prior Action and Deferred Action

The EPA is addressing the following Clean Air Act Requirements in separate rulemakings:<sup>20</sup>

- 110(a)(2)(D) (in part, see below): Interstate Pollution Transport.
  - 110(a)(2)(D)(i)(I)—significant contribution to a nonattainment area (prong 1).
  - 110(a)(2)(D)(i)(I)—significant contribution to a maintenance area (prong 2).

Additionally, on August 12, 2022, NDEP withdrew its submittal of the Prong 4 element in Nevada's Infrastructure SIP Submittal and submitted a revised Prong 4 element with the State's Regional Haze Plan for the 2nd Planning Period.<sup>21</sup> The EPA

<sup>19</sup> See 40 CFR 52.1485. The EPA fully delegated the implementation of the federal PSD programs to NDEP on October 19, 2004 ("Agreement for Delegation of the Federal Prevention of Significant Deterioration (PSD) Program by the United States Environmental Protection Agency, Region 9 to the Nevada Division of Environmental Protection"), as updated on September 15, 2011 and November 7, 2012, and to Washoe County on March 13, 2008 ("Agreement for Delegation of the Federal Prevention of Significant Deterioration (PSD) Program by the United States Environmental Protection Agency, Region 9 to the Washoe County District Health Department").

<sup>20</sup> 87 FR 20036 (April 6, 2022), 87 FR 29108 (May 12, 2022), 87 FR 31485 (May 24, 2022).

<sup>21</sup> See letter dated August 12, 2022, from Greg Lovato, Administrator, Nevada Department of Environmental Protection, to Martha Guzman, Regional Administrator, EPA Region 9, re: "The Nevada State Implementation Plan for the Regional Haze Rule for the Second Planning Period; Withdrawal and Replacement of Elements of the

intends to act on the revised Prong 4 element when we act on Nevada's Regional Haze Plan for the 2nd Planning Period and is therefore not acting on the requirement as part of this action.

### E. Proposed Reclassification for Emergency Episode Planning

The priority thresholds for classification of air quality control regions are listed in 40 CFR 51.150, and the specific classifications of air quality control regions in Nevada are listed at 40 CFR 52.1471. Consistent with the provisions of 40 CFR 51.153, reclassification of an air quality control region must rely on the most recent three years of air quality data. Under 40 CFR 51.151 and 51.152, regions classified Priority I are required to have SIP-approved emergency episode contingency plans, while those classified Priority III are not required to have such plans.<sup>22</sup> We interpret 40 CFR 51.153 as establishing the means for states to review air quality data and request a higher or lower classification for any given region and as providing the regulatory basis for the EPA to reclassify such regions, as appropriate, under the authorities of CAA sections 110(a)(2)(G) and 301(a)(1).

The priority classification threshold for ozone under 40 CFR 51.150 is 195 micrograms per cubic meter, equivalent to 0.10 parts per million (ppm), calculated as a one-hour maximum. Regions with one-hour ozone concentrations greater than 0.10 ppm are classified as Priority I for ozone under 40 CFR 51.150. All other regions are classified as Priority III for ozone. Nevada's regional priority classifications for ozone under 40 CFR 51.150 are located at 40 CFR 52.1471. Currently, the Las Vegas Intrastate air quality control region (AQCR) is classified as Priority I for ozone. The Northwest Nevada Intrastate AQCR and Nevada Intrastate AQCR are currently classified as Priority III for ozone.

Air quality data from 2019–2021 indicate that the maximum one-hour ozone concentrations monitored in two Nevada regions exceed the Priority I threshold for one-hour ozone. The maximum one-hour ozone concentration measured in the Las Vegas Intrastate AQCR in this period was 0.104 ppm; the maximum one-hour ozone concentration measured in the Northwest Nevada Intrastate AQCR in this period was 0.106 ppm. We are proposing to reclassify the Northwest Nevada Intrastate AQCR from Priority III

<sup>22</sup> 2012 PM<sub>2.5</sub> NAAQS and 2015 Ozone NAAQS Infrastructure SIPs."

<sup>22</sup> 40 CFR 51.151 and 51.152.

to Priority I for ozone and to retain the classification of the Las Vegas Intrastate AQCR as Priority I.

Air quality data from 2019–2021 also indicate that the maximum one-hour ozone concentration monitored in the Nevada Intrastate AQCR does not exceed the Priority I threshold for one-hour ozone. The maximum one-hour ozone concentration monitored in this region from 2019–2021 was 0.099 ppm. We are therefore not reclassifying the Nevada Intrastate AQCR priority classification and it remains as Priority III for ozone.

If finalized as proposed, the reclassification of the Northwest Nevada Intrastate AQCR from Priority III to Priority I for ozone will not generate new requirements for Nevada to submit an emergency episode contingency plan because NDEP and Washoe County—the two agencies with jurisdiction over the AQCR—already have SIP-approved emergency episode plans. Thus, our proposed reclassification of the Northwest Nevada Intrastate AQCR for ozone also does not affect our proposed approval of the Nevada SIP with respect to CAA section 110(a)(2)(G) for the 2015 ozone NAAQS.

#### F. Request for Public Comments

The EPA is soliciting public comments on this proposed rulemaking. We will accept comments from the public for the next 30 days. We will consider any comments received before taking final action.

#### V. Incorporation by Reference

In this rule, the EPA is proposing to include in a final EPA rule regulatory text that includes incorporation by reference. In accordance with requirements of 1 CFR 51.5, the EPA is proposing to incorporate by reference the NDEP rule described in section III.B.1. The EPA has made, and will continue to make, these documents generally available electronically in the docket for this rulemaking at <https://www.regulations.gov>.

#### VI. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at <http://www.epa.gov/laws-regulations/laws-and-executive-orders>.

##### A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget (OMB) for review.

##### B. Paperwork Reduction Act (PRA)

This action does not impose an information collection burden under the PRA because this action does not impose additional requirements beyond those imposed by state law.

##### C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action will not impose any requirements on small entities beyond those imposed by state law.

##### D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. This action does not impose additional requirements beyond those imposed by state law. Accordingly, no additional costs to state, local, or tribal governments, or to the private sector, will result from this action.

##### E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

##### F. Executive Order 13175: Coordination With Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175, because the SIP is not approved to apply on any Indian reservation land or in any other area where the EPA or an Indian tribe has demonstrated that a tribe has jurisdiction, and will not impose substantial direct costs on tribal governments or preempt tribal law. Thus, Executive Order 13175 does not apply to this action.

##### G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2–202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not impose additional

requirements beyond those imposed by state law.

##### H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

##### I. National Technology Transfer and Advancement Act (NTTAA)

Section 12(d) of the NTTAA directs the EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. The EPA believes that this action is not subject to the requirements of section 12(d) of the NTTAA because application of those requirements would be inconsistent with the CAA.

##### J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Population

The state did not evaluate environmental justice considerations as part of its SIP submittal. There is no information in the record inconsistent with the stated goals of E.O. 12898 of achieving environmental justice for people of color, low-income populations, and indigenous peoples.

#### List of Subjects in 40 CFR Part 52

Approval and promulgation of implementation plans, Air pollution control, Environmental protection, Incorporation by reference, Intergovernmental relations, Nitrogen oxides, Ozone, Reporting and recordkeeping requirements, Volatile organic compounds.

Dated: January 5, 2023.

**Martha Guzman Aceves,**

*Regional Administrator, Region IX.*

[FR Doc. 2023–00328 Filed 1–10–23; 8:45 am]

**BILLING CODE 6560–50–P**

#### ENVIRONMENTAL PROTECTION AGENCY

#### 40 CFR Part 81

[EPA–R09–OAR–2022–0953; FRL–10502–01–R9]

#### Designation of Areas for Air Quality Planning Purposes; California; Coachella Valley Ozone Nonattainment Area; Reclassification to Extreme

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** Under the Clean Air Act (CAA or “Act”), the Environmental Protection Agency (EPA) is proposing to approve a request from the State of California to reclassify the Coachella Valley ozone nonattainment area from “Severe-15” to “Extreme” for the 2008 ozone national ambient air quality standards (NAAQS). This action does not reclassify any areas of Indian country within the boundaries of the Coachella Valley 2008 ozone nonattainment area. Upon final reclassification of the Coachella Valley ozone nonattainment area as an Extreme nonattainment area for the 2008 ozone NAAQS, the applicable attainment dates would be as expeditiously as practicable but no later than July 20, 2032. The EPA is proposing to establish a deadline of no later than 18 months from the effective date of reclassification for submittal of revisions to the Coachella Valley portion of the California SIP to meet additional requirements for Extreme ozone nonattainment areas. Lastly, the EPA is proposing to extend our previous limited approval of the motor vehicle emissions budgets to new budgets to be developed as part of a SIP submission meeting the Extreme area requirements for the Coachella Valley.

**DATES:** Written comments must arrive on or before February 10, 2023.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA–R09–OAR–2022–0953 at <https://www.regulations.gov>. For comments submitted at *Regulations.gov*, follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov*. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.*, on the web, cloud, or other file sharing system). For additional submission methods, please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section. For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <https://www.epa.gov/dockets/commenting-epa-dockets>. If you need

assistance in a language other than English or if you are a person with disabilities who needs a reasonable accommodation at no cost to you, please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section.

**FOR FURTHER INFORMATION CONTACT:** Khoi Nguyen, Air Planning Office (AIR–2), EPA Region IX, 75 Hawthorne Street, San Francisco, CA 94105, (415) 947–4120, or by email at [nguyen.khoi@epa.gov](mailto:nguyen.khoi@epa.gov).

**SUPPLEMENTARY INFORMATION:** Throughout this document, “we,” “us,” and “our” refer to the EPA.

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### I. Reclassification as Extreme Nonattainment and Extreme Area SIP Requirements

#### A. Reclassification as Extreme and Applicable Attainment Date

Effective July 20, 2012, the EPA designated and classified the Riverside County (Coachella Valley), California, nonattainment area (“Coachella Valley”) as “Severe-15” nonattainment for the 2008 ozone NAAQS.<sup>1</sup> Air quality in the Coachella Valley is jointly overseen by the South Coast Air Quality Management District (“District”) and the California Air Resources Board (CARB). The Coachella Valley is located within a portion of Riverside County, and its geographic borders also include Indian country under the jurisdiction of six federally recognized tribes.<sup>2</sup> Our classification of the Coachella Valley as a Severe-15 ozone nonattainment area established a requirement that the area attain the 2008 ozone NAAQS as expeditiously as practicable, but no later than 15 years from the date of designation as nonattainment, *i.e.*, July 20, 2027.<sup>3</sup>

<sup>1</sup> 77 FR 30088 (May 21, 2012). The 2008 ozone NAAQS is 0.075 parts per million (ppm), daily maximum 8-hour average. The 2008 ozone NAAQS is met at an ambient air quality monitoring site when the 3-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to 0.075 ppm. See 40 CFR 50.15.

<sup>2</sup> For a precise definition of the boundaries of the Coachella Valley 2008 ozone nonattainment area, see 40 CFR 81.305.

<sup>3</sup> Throughout this document, we use “Severe” to refer to Severe areas that have 15 years to attain the ozone standards.”

On November 15, 2022, CARB submitted a request to the EPA seeking a voluntary reclassification of the Coachella Valley from Severe-15 to Extreme for the 2008 ozone NAAQS.<sup>4</sup> We are proposing to approve CARB’s reclassification request under the “voluntary reclassification” provisions of section 181(b)(3) of the Act, which mandates that the EPA approve such a request. Upon final reclassification, the applicable attainment dates will be as expeditiously as practicable, but no later than 20 years from the area’s date of designation as nonattainment, *i.e.*, July 20, 2032.

Because the State of California does not have jurisdiction over Indian country geographically located within the borders of the state, CARB’s request to reclassify the Coachella Valley does not apply to Indian country under the jurisdiction of the tribes identified in 40 CFR 81.305. In these areas of Indian country, the EPA implements federal CAA programs, including reclassifications, consistent with our discretionary authority under sections 301(a) and 301(d)(4) of the CAA. When the EPA designated the Coachella Valley as nonattainment for the 2008 ozone NAAQS, we included the jurisdictional lands of the six federally recognized tribes located within the boundaries of the nonattainment area: the Agua Caliente Band of Cahuilla Indians; the Augustine Band of Cahuilla Mission Indians; the Cabazon Band of Cahuilla Indians;<sup>5</sup> the Santa Rosa Band of Cahuilla Indians; the Torres Martinez Desert Cahuilla Indians; and the Twenty-Nine Palms Band of Mission Indians.

This action does not reclassify any areas of Indian country within the Coachella Valley. Under the EPA’s Consultation Policy, the EPA consults on a government-to-government basis with federally recognized tribal governments when the EPA’s actions and decisions may affect tribal interests.<sup>6</sup> The EPA is currently undergoing this consultation process and any proposed reclassification of tribal lands will be addressed in a future rulemaking action.

<sup>4</sup> Letter dated November 15, 2022, from Steven S. Cliff, Executive Officer, CARB, to Martha Guzman, Regional Administrator, EPA Region IX (submitted electronically November 15, 2022).

<sup>5</sup> The designation table at 40 CFR 81.305 lists the Cabazon Band of Cahuilla Indians as the “Cabazon Band of Mission Indians,” which was the federally recognized name of the tribe at the time of the designation.

<sup>6</sup> The EPA’s Consultation Policy is available at <https://www.epa.gov/tribal/epa-policy-consultation-and-coordination-indian-tribes>.

*B. Clean Air Act Requirements for Extreme Ozone Nonattainment Area Plans*

1. Extreme Area Plan Requirements

Under CAA section 182(e), an attainment plan for an Extreme nonattainment area must include the elements required for a Severe area as well as additional plan elements for an Extreme area.<sup>7</sup> Where applicable, the plan elements should reflect the reduction of the major source threshold under 182(e) from 25 tons per year (tpy) for a Severe area to 10 tpy for an Extreme area. The requirements for an Extreme area plan include, but are not limited to: (1) base year emissions inventory (CAA sections 172(c)(3) and 182(a)(1)); (2) emissions statement rule (CAA section 182(a)(3)(B)); (3) New Source Review (NSR) program (CAA sections 172(c)(5), 173, 182(a)(2)(C), 182(d) and 182(d)(2)); (4) additional reasonably available control technology (RACT) rules to address sources subject to the lower Extreme area major source threshold (CAA section 182(b)(2)); (5) reasonably available control measures (RACM) demonstration (CAA section 172(c)(1)); (6) attainment demonstration (CAA sections 172(c)(1) and 182(c)(2)(A)); (7) reasonable further progress (RFP) demonstration (CAA sections 172(c)(2), 182(b)(1), 182(c)(2)(B));<sup>8</sup> (8) contingency measures (CAA sections 172(c)(9) and 182(c)(9)); (9) enhanced vehicle inspection and maintenance program (CAA section 182(c)(3)); (10) clean fuels fleet program (CAA sections 182(c)(4)(A) and 246); (11) enhanced ambient air monitoring (CAA section 182(c)(1)); (12) transportation control strategies and measures to offset emissions increases from vehicle miles traveled (CAA section 182(d)(1)(A)); (13) CAA section 185 fee program (CAA sections 182(d)(3) and 185); and (14) use of clean fuels or advanced control technology for boilers (CAA section 182(e)(3)).

For the Coachella Valley, the District and State will need to submit a plan that includes all elements required under CAA section 182(e), and that demonstrates attainment of the 2008 ozone NAAQS as expeditiously as practicable but no later than July 20, 2032. The plan should identify adopted measures sufficient to make the required

RFP and attainment demonstrations for the area.<sup>9</sup>

For areas initially designated Extreme, the CAA and the EPA's ozone SIP Requirements Rules (SRR) for the 2008 ozone NAAQS<sup>10</sup> generally provides, depending on the element, up to four years from the date of designation to submit the required SIP elements to the EPA. For the 2008 ozone NAAQS, the statutory deadline for SIP submissions for areas initially designated as Extreme was July 20, 2016. Under our general CAA section 301(a) authority, the EPA proposes to establish a deadline of 18 months from the effective date of the final reclassification for the State to submit SIP revisions addressing the Extreme area requirements for the Coachella Valley. This timeframe is consistent with how the EPA has handled establishing SIP submission deadlines under CAA section 182(i) for ozone areas reclassified by operation of law under CAA section 181(b)(2),<sup>11</sup> and generally aligns with the timeframe established in our prior reclassification of the Coachella Valley to Extreme for the 1997 ozone NAAQS.<sup>12</sup> We recognize that the District and CARB will require adequate time to develop and implement new measures and strategies, revise local rules, complete necessary analysis and demonstrations, and to provide adequate opportunities for public involvement.<sup>13</sup> The State must ensure that all required planning elements for an Extreme nonattainment area are satisfied, that public processes are completed, and that the resulting plan is sufficient to demonstrate attainment of the 2008 ozone NAAQS in the Coachella Valley as expeditiously as practicable but no later than July 20, 2032.

<sup>9</sup> CAA section 182(e)(5) allows the EPA to approve an Extreme area attainment demonstration based on anticipated development of new control techniques or improvement of existing control technologies. This option requires a state to demonstrate that provisions based on these new techniques or improvements are not necessary to meet emission reductions required within the first 10 years after an area's designation as Extreme, and to submit, at least three years before implementation of the proposed provisions relying on new technology, contingency measures to be implemented in case the anticipated technologies do not achieve the planned reductions. Based on the shorter timeline to attainment (roughly nine years from reclassification), use of CAA section 182(e)(5) is not appropriate in this instance.

<sup>10</sup> The EPA promulgated the SRR for the 2008 ozone NAAQS at 40 CFR part 52, subpart AA.

<sup>11</sup> See 87 FR 60926 (October 7, 2022) (providing 18 months from effective date of final reclassification of areas to Severe). See also discussion in proposal at 87 FR 21825, 21838.

<sup>12</sup> 85 FR 2311 (January 15, 2020) (establishing deadline roughly 19 months after reclassification effective upon publication).

<sup>13</sup> See *id.* at 2312.

RACT controls for an area reclassified to a higher nonattainment classification should be implemented no later than the ozone season of the attainment year for the new classification, *i.e.*, the ozone season immediately preceding the maximum attainment date.<sup>14</sup> For the Coachella Valley, which has a year-round ozone season and which would have a July 20, 2032 attainment date for an Extreme classification, RACT controls would need to be implemented by January 1, 2031.

2. NSR and Title V Program Revisions

Reclassification to Extreme ozone nonattainment triggers several changes under the CAA's NSR and title V permitting programs. Under CAA sections 182(e) and 182(f), sources in Extreme nonattainment areas are defined as "major sources" of volatile organic compounds (VOC) or nitrogen oxides (NO<sub>x</sub>) under the NSR and title V permitting programs if they emit at least 10 tpy of these pollutants, compared to 25 tpy in a Severe nonattainment area. Additionally, under CAA section 182(e)(1), emissions from new major sources of VOC or NO<sub>x</sub> and major modifications in an Extreme nonattainment area must be offset at a rate of at least 1.5 to 1 (or at least 1.2 to 1 if the plan requires all existing major sources in the nonattainment area to use best available control technology). Further, under CAA section 182(e)(2), any change at a major stationary source that results in an increase in emissions from any discrete operation, unit, or other pollutant emitting activity at the source is generally considered a modification, subject to additional provisions for emissions increases that are offset through internal reductions and for equipment that is installed to comply with CAA requirements.

Accordingly, in addition to the required plan revisions discussed in section I.B.1 of this action, we are proposing to require the State to submit revised rules for the Coachella Valley that reflect the Extreme area definitions for new major sources and major modifications, and that increase the offset ratios for these sources and modifications consistent with CAA section 182(e)(1) and (2), by no later than 18 months from the effective date of the EPA's final reclassification of the area to Extreme. We are also proposing to require the State to submit any changes to the title V operating permits program for the Coachella Valley necessary to reflect the change in the major source threshold from 25 (tpy) for

<sup>7</sup> CAA section 182(e) specifically excludes certain Severe area requirements from the Extreme area requirements, *e.g.*, CAA section 182(c)(6), (7), and (8).

<sup>8</sup> CAA section 182(e) does not allow the state to use the provision at CAA section 182(c)(2)(B)(ii) that allows RFP reductions of less than three percent per year based on additional demonstrations.

<sup>14</sup> See 40 CFR 51.1312(a)(3)(ii).



Severe areas to 10 tpy for Extreme areas by no later than 18 months from the effective date of final reclassification. The rationale for the EPA's deadline of 18 months from the effective date of the final action for this reclassification is discussed in Section I.B.1.

State lands in the Coachella Valley are already classified as Extreme for the 1997 ozone NAAQS,<sup>15</sup> and we recognize that certain Extreme area requirements may already be met through existing rules. In lieu of submitting new revised regulations to address these requirements, the State may provide a written statement certifying that it has determined that existing regulations are adequate to meet the applicable nonattainment area planning requirements of CAA section 182.

## II. Motor Vehicle Emissions Budgets

Under our transportation conformity rule, as a general matter, once motor vehicle emission budgets ("budgets") are approved, they can only be superseded by revised budgets that the EPA approves as a SIP revision. In other words, approved budgets generally cannot be superseded through an EPA adequacy finding of revised budgets, but rather only through EPA approval of the revised budgets, unless the initial approval of the budgets specifies that the EPA is limiting the duration of the approval to last only until subsequently submitted budgets are found adequate.<sup>16</sup>

In our previous action on the Severe area plan, we limited the duration of the approval of the budgets to last only until the effective date of the EPA's adequacy finding for any subsequently submitted budgets.<sup>17</sup> We limited our approval in response to a request by CARB, in light of the EPA's then-recent approval of EMFAC2017 as an updated version of the model (EMFAC2014) used for the budgets in the 2016 Coachella Valley Ozone SIP.<sup>18</sup> CARB stated that without the ability to replace the budgets using the budget adequacy process, the benefits of using the updated data might not be realized for a year or more after the updated SIP revision (with the EMFAC2017-derived budgets) was submitted, due to the length of the SIP approval process. We found CARB's explanation appropriate and

accordingly limited the duration of the budgets.

As part of the recent reclassification request, the State also requested that the EPA revise our previous limited approval of the budgets for the Coachella Valley to allow the existing SIP-approved budgets for the Severe area plan to be replaced with new budgets for the Extreme area plan. Similar to the previous request, CARB indicated that the new budgets being developed for the SIP will be based on EMFAC2017, whereas the budgets for the SIP-approved Severe area plan were developed using EMFAC2014. We find that CARB's explanation for limiting the duration of the approval of the budgets is still appropriate and provides us with a reasonable basis on which to continue to limit the duration of the approval of the budgets to the new Extreme area plan. We also note that on November 15, 2022, the EPA approved and announced the availability of EMFAC2021 for use by State and local governments to meet CAA requirements.<sup>19</sup> Therefore, we propose to continue to limit the duration of our approval of the budgets in the 2016 Coachella Valley Ozone SIP until we find revised budgets developed for the Extreme area plan to be adequate.

## III. Summary of Proposed Action and Request for Public Comment

Pursuant to CAA section 181(b)(3), we are proposing to grant CARB's request to reclassify the Coachella Valley ozone nonattainment area from Severe-15 to Extreme for the 2008 ozone NAAQS. Upon reclassification, the new attainment dates for the Coachella Valley ozone nonattainment area would be as expeditiously as practicable, but no later than July 20, 2032, for the 2008 ozone NAAQS. This action would not reclassify any areas of Indian country within the Coachella Valley. The EPA is proposing to establish a deadline of no later than 18 months from the effective date of the final reclassification action for the State to submit revisions to the Coachella Valley portion of the California SIP to meet the additional requirements applicable to Extreme ozone nonattainment areas.

<sup>19</sup> 87 FR 68483 (November 15, 2022). As indicated in this action, the CAA requires that SIP inventories and control measures be based on the most current information and applicable models that are available when a SIP revision is developed and thus there is no grace period for use of EMFAC2021 in SIP revisions. However, the EPA also recognizes the time and level of effort that air quality planning agencies may have already undertaken in SIP development using EMFAC2017. Agencies should consult with EPA Region IX if they have questions about how the EPA's approval of EMFAC2021 affects SIP revisions under development in specific nonattainment or maintenance areas.

Lastly, the EPA is proposing to continue to limit the duration of our approval of the budgets in the 2016 Coachella Valley Ozone SIP until we find revised budgets developed for the Extreme area plan to be adequate.

We will accept comments from the public on these proposals for the next 30 days. The deadline and instructions for submission of comments are provided in the **DATES** and **ADDRESSES** sections at the beginning of this preamble.

## IV. Statutory and Executive Order Reviews

Under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011), this proposed action is not a "significant regulatory action" and therefore is not subject to Executive Order 12866. With respect to lands under state jurisdiction, voluntary reclassifications under CAA section 181(b)(3) of the CAA are based solely upon requests by the state, and the EPA is required under the CAA to grant them. These actions do not, in and of themselves, impose any new requirements on any sectors of the economy. In addition, because the statutory requirements are clearly defined with respect to the differently classified areas, and because those requirements are automatically triggered by reclassification, reclassification does not impose a materially adverse impact under Executive Order 12866. With respect to Indian country, reclassifications do not establish deadlines for air quality plans or plan revisions. For these reasons, this proposed action is also not subject to Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use" (66 FR 28355, May 22, 2001).

In addition, I certify that this proposed action will not have a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*), and that this proposed action does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4), because the EPA is required to grant requests by states for voluntary reclassifications and such reclassifications in and of themselves do not impose any federal intergovernmental mandate, and because tribes are not subject to implementation plan submittal deadlines that apply to states as a result of reclassifications.

<sup>15</sup> 84 FR 32841 (July 10, 2019).

<sup>16</sup> 40 CFR 93.118(e)(1).

<sup>17</sup> 85 FR 57714 (September 16, 2020).

<sup>18</sup> EMFAC is short for Emission FACTor. On December 15, 2015, the EPA approved EMFAC2014 for use by State and local governments to meet CAA requirements. 80 FR 77337. On August 15, 2019, the EPA approved and announced the availability of EMFAC2017 for use by State and local governments to meet CAA requirements. See 84 FR 41717.

This proposed action also does not have tribal implications because it will not have a substantial direct effect on one or more Indian tribes, on the relationship between the federal government and Indian tribes, or on the distribution of power and responsibilities between the federal government and Indian tribes, as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

Executive Order 12898 (59 FR 7629, February 16, 1994) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States. The State did not evaluate environmental justice considerations as part of its reclassification request. There is no information in the record inconsistent with the stated goals of Executive Order 12898 of achieving environmental justice for people of color, low-income populations, and indigenous peoples.

This proposed action also does not have federalism implications because it does not have substantial direct effects on the states, on the relationship between the national government and the states, nor on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999). This proposed action does not alter the relationship or the distribution of power and responsibilities established in the CAA.

This proposed action also is not subject to Executive Order 13045, "Protection of Children from Environmental Health Risks and Safety Risks" (62 FR 19885, April 23, 1997), because the EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5-501 of the Executive Order has the potential to influence the regulation.

Reclassification actions do not involve technical standards and thus, the requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) do not apply. This proposed action does not impose an information collection burden under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*).

### List of Subjects in 40 CFR Part 81

Environmental protection, Air pollution control, Intergovernmental relations, Ozone.

**Authority:** 42 U.S.C. 7401 *et seq.*

Dated: January 5, 2023.

**Martha Guzman Aceves,**

*Regional Administrator, Region IX.*

[FR Doc. 2023-00330 Filed 1-10-23; 8:45 am]

**BILLING CODE 6560-50-P**

## DEPARTMENT OF HOMELAND SECURITY

### Coast Guard

#### 46 CFR Parts 8 and 197

[Docket No. USCG-1998-3786]

RIN 1625-AA21

#### Commercial Diving Operations

**AGENCY:** Coast Guard, DHS.

**ACTION:** Notice of proposed rulemaking; withdrawal.

**SUMMARY:** The Coast Guard is withdrawing the proposed rule entitled "Commercial Diving Operations" published in the **Federal Register** on February 19, 2015. We are taking this action because there have been changes in the industry since we published the NPRM in 2015, including new standards and technologies. We have concluded that the rule we proposed in 2015 is no longer appropriate in light of those changes. The Coast Guard may issue a new rulemaking in the future if warranted.

**DATES:** The advance notice of proposed rulemaking published on June 26, 1998 (63 FR 34840); comment period extended on September 23, 1998 (63 FR 50848); second advance notice of proposed rulemaking published on January 6, 2009 (74 FR 414); notice of proposed rulemaking published on February 19, 2015 (80 FR 9151), and reopening of comment period on August 24, 2015 (80 FR 51173) are withdrawn as of January 11, 2023.

**ADDRESSES:** The docket for this withdrawal is available at the Federal eRulemaking Portal at <https://www.regulations.gov>. Please search for docket number USCG-1998-3786.

**FOR FURTHER INFORMATION CONTACT:** For information about this document call or email Kenneth A. Smith, General Engineer, Vessel and Facility Operating Standards Division, CG-OES-2, U.S. Coast Guard; telephone 202-372-1413, email [Ken.A.Smith@uscg.mil](mailto:Ken.A.Smith@uscg.mil).

**SUPPLEMENTARY INFORMATION:**

### Background

On February 19, 2015, the Coast Guard published a notice of proposed rulemaking (NPRM) titled "Commercial Diving Operations" in the **Federal Register** (80 FR 9152).<sup>1</sup> The intent of the proposed rulemaking was to amend the regulations for commercial diving conducted from deepwater ports or deepwater port safety zones, in connection with Outer Continental Shelf activities, or from vessels that are required to have a Coast Guard certificate of inspection. The proposed rulemaking sought to amend these regulations to improve the safety of people and property involved in commercial diving operations and to protect the environment in which they operate, as well as to include current industry best practices. The proposed regulations also aimed to allow the Coast Guard to approve independent third-party organizations to assist with ensuring regulatory compliance of commercial diving regulations.

### Withdrawal

The Coast Guard is withdrawing the proposed rule published on February 19, 2015. Upon further review of commercial diving technologies and standards, it is evident that significant changes have occurred in the industry and we no longer consider the original proposal an appropriate solution.

The Coast Guard will continue to assess the standards and technologies used and practiced in the commercial diving industry, support the continued development of commercial diving standards to improve commercial diving safety, oversee the work of recognized organizations, and request input from our Federal advisory committees as appropriate. The Coast Guard may decide to develop new rulemaking proposals in the future, but Unified Agenda item 1625-AA21 will be withdrawn once this notice is published.

This notice is issued under authority of 5 U.S.C. 552(a).

Dated: January 4, 2023.

**W.R. Arguin,**

*Rear Admiral, U.S. Coast Guard, Assistant Commandant for Prevention Policy.*

[FR Doc. 2023-00207 Filed 1-10-23; 8:45 am]

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<sup>1</sup> The Coast Guard published four additional documents related to the 2015 NPRM. We issued our first advance notice of proposed rulemaking (ANPRM) on June 26, 1998 (63 FR 34840) and extended the comment period on September 23, 1998 (63 FR 50848). On January 6, 2009, we published a second ANPRM (74 FR 414). After publishing the 2015 NPRM, we reopened the comment period on August 24, 2015 (80 FR 51173).

**DEPARTMENT OF COMMERCE****National Oceanic and Atmospheric Administration****50 CFR Parts 223 and 224**

[Docket No. 230104–0002; RTID 0648–XR123]

**Endangered and Threatened Wildlife; 90-Day Finding on a Petition To List Oregon Coast and Southern Oregon and Northern California Coastal Chinook Salmon as Threatened or Endangered Under the Endangered Species Act**

**AGENCY:** National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION:** 90-Day petition finding, request for information, and initiation of status review.

**SUMMARY:** We, NMFS, announce a 90-day finding on a petition to list the Oregon Coast (OC) and Southern Oregon and Northern California Coastal (SONCC) Chinook salmon (*Oncorhynchus tshawytscha*) Evolutionarily Significant Units (ESUs) as threatened or endangered under the Endangered Species Act (ESA) or, alternatively, list only the spring-run Chinook salmon components of the OC ESU and the SONCC ESU as threatened or endangered under the ESA. The Petitioners also requested that we designate critical habitat concurrently with the listing. With respect to the request to list the entire OC and SONCC ESUs, we find that the petition presents substantial scientific and commercial information indicating the petitioned actions may be warranted. For the request to list only the spring-run components of those ESUs, we do not find that the petition presents substantial scientific and commercial information indicating that the petitioned action is warranted. We will conduct status reviews of the OC and SONCC Chinook salmon ESUs to determine whether the petitioned actions are warranted. To ensure that the status reviews are comprehensive, we are soliciting scientific and commercial information pertaining to these species from any interested party.

**DATES:** Scientific and commercial information pertinent to the petitioned action must be received by March 13, 2023.

**ADDRESSES:** You may submit data and information relevant to our review of the status of Oregon Coast and Southern Oregon and Northern California Coastal

Chinook salmon, identified by “Oregon Coast and Southern Oregon and Northern California Coastal Chinook salmon Petition” or by the docket number, NOAA–NMFS–2022–0116, using the following methods:

- **Electronic Submission:** Submit all electronic public comments via the Federal e-Rulemaking Portal. Go to <https://www.regulations.gov> and enter NOAA–NMFS–2022–0116 in the Search box. Click on the “Comment” icon, complete the required fields, and enter or attach your comments.
- **Mail or Hand-Delivery:** Protected Resources Division, West Coast Region, NMFS, 1201 NE Lloyd Blvd., Suite #1100, Portland, OR 97232. Attn: Gary Rule.

**Instructions:** Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by NMFS. All comments received are a part of the public record and will generally be posted for public viewing on [www.regulations.gov](http://www.regulations.gov) without change. All personal identifying information (e.g., name, address, etc.), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. NMFS will accept anonymous comments (enter “N/A” in the required fields if you wish to remain anonymous).

Electronic copies of the petition and related materials are available from the NMFS website at <https://www.fisheries.noaa.gov/endangered-species-conservation/candidate-species-under-endangered-species-act>.

**FOR FURTHER INFORMATION CONTACT:** Gary Rule, NMFS West Coast Region, at [gary.rule@noaa.gov](mailto:gary.rule@noaa.gov), (503) 230–5424; or Heather Austin, NMFS Office of Protected Resources, at [heather.austin@noaa.gov](mailto:heather.austin@noaa.gov), (301) 427–8422.

**SUPPLEMENTARY INFORMATION:****Background**

On August 4, 2022, the Secretary of Commerce received a petition from the Native Fish Society, Center for Biological Diversity, and Umpqua Watersheds (hereafter, the Petitioners) to list the OC and SONCC Chinook salmon ESUs as threatened or endangered under the ESA or, alternatively, list only spring-run Chinook salmon in both the OC and SONCC ESUs as threatened or endangered under the ESA. The Petitioners also request the designation of critical habitat concurrent with ESA listing. Copies of the petition are available as described above (see **ADDRESSES**).

**ESA Statutory, Regulatory, and Policy Provisions, and Evaluation Framework**

Section 4(b)(3)(A) of the ESA of 1973, as amended (16 U.S.C. 1531 *et seq.*), requires, to the maximum extent practicable, that within 90 days of receipt of a petition to list a species as threatened or endangered, the Secretary of Commerce make a finding on whether that petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted, and to promptly publish such finding in the **Federal Register** (16 U.S.C. 1533(b)(3)(A)). When it is found that substantial scientific or commercial information in a petition indicates the petitioned action may be warranted (a “positive 90-day finding”), we are required to promptly commence a review of the status of the species concerned during which we will conduct a comprehensive review of the best available scientific and commercial information. In such cases, we conclude the review with a finding as to whether the petitioned action is warranted within 12 months of receipt of the petition. Because the finding at the 12-month stage is based on a more thorough review of the available information, as compared to the narrow scope of review at the 90-day stage, a “may be warranted” finding does not prejudice the outcome of the status review.

Under the ESA, a listing determination may address a species, which is defined to also include subspecies and, for any vertebrate species, any distinct population segment (DPS) that interbreeds when mature (16 U.S.C. 1532(16)). In 1991, we issued the Policy on Applying the Definition of Species Under the Endangered Species Act to Pacific Salmon (ESU Policy; 56 FR 58612, November 20, 1991), which explains that Pacific salmon populations will be considered a DPS, and hence a “species” under the ESA, if it represents an “evolutionarily significant unit” of the biological species. The two criteria for delineating an ESU are: (1) It is substantially reproductively isolated from other conspecific populations, and (2) it represents an important component in the evolutionary legacy of the species. The ESU Policy was used to define the OC and SONCC Chinook salmon ESUs in 1999 (64 FR 50394, September 16, 1999), and we use it exclusively for defining distinct population segments of Pacific salmon. A joint NMFS–U.S. Fish and Wildlife Service (USFWS) (jointly, “the Services”) policy clarifies the Services’ interpretation of the phrase “distinct

population segment” for the purposes of listing, delisting, and reclassifying a species under the ESA (DPS Policy; 61 FR 4722, February 7, 1996). In announcing this policy, the Services indicated that the ESU Policy for Pacific salmon was consistent with the DPS Policy and that NMFS would continue to use the ESU Policy for Pacific salmon.

A species, subspecies, or DPS is “endangered” if it is in danger of extinction throughout all or a significant portion of its range, and “threatened” if it is likely to become endangered within the foreseeable future throughout all or a significant portion of its range (ESA sections 3(6) and 3(20), respectively, 16 U.S.C. 1532(6) and (20)). Pursuant to the ESA and our implementing regulations, we determine whether species are threatened or endangered based on any one or a combination of the following five section 4(a)(1) factors: the present or threatened destruction, modification, or curtailment of habitat or range; overutilization for commercial, recreational, scientific, or educational purposes; disease or predation; inadequacy of existing regulatory mechanisms to address identified threats; or any other natural or manmade factors affecting the species’ existence (16 U.S.C. 1533(a)(1), 50 CFR 424.11(c)).

ESA-implementing regulations issued jointly by NMFS and USFWS (50 CFR 424.14(h)(1)(i)) define “substantial scientific or commercial information” in the context of reviewing a petition to list, delist, or reclassify a species as “credible scientific or commercial information in support of the petition’s claims such that a reasonable person conducting an impartial scientific review would conclude that the action proposed in the petition may be warranted.” Conclusions drawn in the petition without the support of credible scientific or commercial information will not be considered “substantial information.” In reaching the initial (90-day) finding on the petition, we consider the information described in sections 50 CFR 424.14(c), (d), and (g) (if applicable).

Our determination as to whether the petition provides substantial scientific or commercial information indicating that the petitioned action may be warranted will depend in part on the degree to which the petition includes the following types of information: (1) Information on current population status and trends and estimates of current population sizes and distributions, both in captivity and the wild, if available; (2) identification of the factors under section 4(a)(1) of the

ESA that may affect the species and where these factors are acting upon the species; (3) whether and to what extent any or all of the factors alone or in combination identified in section 4(a)(1) of the ESA may cause the species to be an endangered species or threatened species (*i.e.*, the species is currently in danger of extinction or is likely to become so within the foreseeable future), and, if so, how high in magnitude and how imminent the threats to the species and its habitat are; (4) information on adequacy of regulatory protections and effectiveness of conservation activities by States as well as other parties, that have been initiated or that are ongoing, that may protect the species or its habitat; and (5) a complete, balanced representation of the relevant facts, including information that may contradict claims in the petition. See 50 CFR 424.14(d).

If the petitioner provides supplemental information before the initial finding is made and states that it is part of the petition, the new information, along with the previously submitted information, is treated as a new petition that supersedes the original petition, and the statutory timeframes will begin when such supplemental information is received. See 50 CFR 424.14(g).

We may also consider information readily available at the time the determination is made (50 CFR 424.14(h)(1)(ii)). We are not required to consider any supporting materials cited by the petitioner if the petitioner does not provide electronic or hard copies, to the extent permitted by U.S. copyright law, or appropriate excerpts or quotations from those materials (*e.g.*, publications, maps, reports, letters from authorities). See 50 CFR 424.14(c)(6).

The “substantial scientific or commercial information” standard must be applied in light of any prior reviews or findings we have made on the listing status of the species that is the subject of the petition. Where we have already conducted a finding on, or review of, the listing status of that species (whether in response to a petition or on our own initiative), we will evaluate any petition received thereafter seeking to list, delist, or reclassify that species to determine whether a reasonable person conducting an impartial scientific review would conclude that the action proposed in the petition may be warranted despite the previous review or finding. Where the prior review resulted in a final agency action—such as a final listing determination, 90-day not-substantial finding, or 12-month not-warranted finding—a petitioned action will generally not be considered

to present substantial scientific and commercial information indicating that the action may be warranted unless the petition provides new information or analysis not previously considered. See 50 CFR 424.14(h)(1)(iii).

At the 90-day finding stage, we do not conduct additional research, and we do not solicit information from parties outside the agency to help us in evaluating the petition. We will accept the petitioners’ sources and characterizations of the information presented if they appear to be based on accepted scientific principles, unless we have specific information in our files that indicates the petition’s information is incorrect, unreliable, obsolete, or otherwise irrelevant to the requested action. Information that is susceptible to more than one interpretation or that is contradicted by other available information will not be dismissed at the 90-day finding stage, so long as it is reliable and a reasonable person conducting an impartial scientific review would conclude it supports the petitioners’ assertions. In other words, conclusive information indicating that the species may meet the ESA’s requirements for listing is not required to make a positive 90-day finding. We will not conclude that a lack of specific information alone necessitates a negative 90-day finding if a reasonable person conducting an impartial scientific review would conclude that the unknown information itself suggests the species may be at risk of extinction presently or within the foreseeable future.

To make a 90-day finding on a petition to list a species, we evaluate whether the petition presents substantial scientific or commercial information indicating the subject species may be either threatened or endangered, as defined by the ESA. First, we evaluate whether the information presented in the petition, in light of the information readily available in our files, indicates that the petitioned entity constitutes a “species” eligible for listing under the ESA. Next, we evaluate whether the information indicates that the species faces an extinction risk such that listing, delisting, or reclassification may be warranted; this may be indicated in information expressly discussing the species’ status and trends, or in information describing impacts and threats to the species. We evaluate any information on specific demographic factors pertinent to evaluating extinction risk for the species (*e.g.*, population abundance and trends, productivity, spatial structure, age structure, sex ratio, diversity, current and historical range, habitat integrity or

fragmentation), and the potential contribution of identified demographic risks to extinction risk for the species. We then evaluate the potential links between these demographic risks and the causative impacts and threats identified in section 4(a)(1).

Information presented on impacts or threats should be specific to the species and should reasonably suggest that one or more of these factors may be operative threats that act or have acted on the species to the point that it may warrant protection under the ESA. Broad statements about generalized threats to the species, or identification of factors that could negatively impact a species, alone, do not constitute substantial information indicating that listing may be warranted. We look for information indicating that not only is the particular species exposed to a factor, but that the species may be responding in a negative fashion; then we assess the potential significance of that negative response.

Many petitions identify risk classifications made by nongovernmental organizations, such as the International Union for Conservation of Nature (IUCN), the American Fisheries Society, or NatureServe, as evidence of extinction risk for a species. Risk classifications by such organizations or made under other Federal or State statutes may be informative, but such classification alone may not provide the rationale for a positive 90-day finding under the ESA. For example, as explained by NatureServe, their assessments of a species' conservation status do "not constitute a recommendation by NatureServe for listing under the U.S. Endangered Species Act" because NatureServe assessments "have different criteria, evidence requirements, purposes and taxonomic coverage than government lists of endangered and threatened species, and therefore these two types of lists should not be expected to coincide" (<https://explorer.natureserve.org/AboutTheData/DataTypes/ConservationStatusCategories>). Additionally, species classifications under IUCN and the ESA are not equivalent; data standards, criteria used to evaluate species, and treatment of uncertainty are also not necessarily the same. Thus, when a petition cites such classifications, we will evaluate the source of information that the classification is based upon in light of the standards on extinction risk and impacts or threats discussed above.

#### Previous Federal Actions

On March 9, 1998, following completion of a comprehensive status

review of Chinook salmon (*O. tshawytscha*) populations in Washington, Oregon, Idaho, and California, we published a proposed rule to list seven Chinook salmon ESUs as threatened or endangered under the ESA (63 FR 11482). In this proposed rule, we identified the OC Chinook salmon ESU as comprised of coastal populations of spring- and fall-run Chinook salmon from the Elk River north to the mouth of the Columbia River. We did not propose to list the OC ESU of Chinook salmon under the ESA, concluding that the ESU was neither in danger of extinction nor likely to become endangered in the foreseeable future.

On September 16, 1999, following an updated status review for four Chinook salmon ESUs, we published a final rule to list two Chinook salmon ESUs as threatened under the ESA (64 FR 50394). In that final rule, we identified the SONCC Chinook salmon ESU as composed of coastal populations of spring- and fall-run Chinook salmon from Euchre Creek, Oregon, through the Lower Klamath River, California (inclusive) (64 FR 50394). After assessing information concerning Chinook salmon abundance, distribution, population trends, and risks, and after considering efforts being made to protect Chinook salmon, we determined in that final rule that the SONCC ESU of Chinook salmon did not warrant listing under the ESA.

On September 24, 2019, the Secretary of Commerce received a petition from the Native Fish Society, Center for Biological Diversity, and Umpqua Watersheds to identify OC spring-run Chinook salmon as a separate ESU and list the ESU as threatened or endangered under the ESA. On May 4, 2020, the Secretary of Commerce received a petition from Richard K. Nawa to identify SONCC spring-run Chinook salmon as a separate ESU and list the ESU as threatened or endangered under the ESA.

We completed a comprehensive analysis of OC and SONCC spring-run Chinook salmon populations in response to the petitions and announced our 12-month findings on August 17, 2021 (86 FR 45970). Based on the best scientific and commercial data available we determined that listing the OC and SONCC spring-run Chinook salmon populations as threatened or endangered ESUs was not warranted. We determined that the OC and SONCC spring-run Chinook salmon populations do not meet the ESU Policy criteria to be classified as ESUs separate from the OC and SONCC fall-run Chinook salmon populations and, therefore, do

not meet the statutory definition of a species under the ESA.

#### Evaluation of Petition and Information Readily Available in NMFS' Files

The petition contains information and assertions in support of listing the OC Chinook salmon ESU and SONCC Chinook salmon ESU, or, alternatively, listing only the spring-run components of the OC and SONCC Chinook salmon ESUs. Under the spring-run-only alternative, the Petitioners state that the entire contents of their previous petitions are expressly incorporated in the current petition by reference. As described above, in response to the previous petitions we completed a comprehensive analysis of OC and SONCC spring-run Chinook salmon populations and concluded that they do not meet the statutory definition of a species under the ESA. The Petitioners do not provide any new information to support identifying and listing spring-run only OC and SONCC Chinook salmon ESUs as threatened or endangered species under the ESA. Based on information provided by the Petitioners, we find that the petition does not present substantial scientific and commercial information indicating that identifying and listing a spring-run only OC and SONCC Chinook salmon ESUs may be warranted. Therefore, we will focus on the Petitioner's claims that the previously identified OC and SONCC Chinook salmon ESUs warrant listing as a threatened or endangered species under the ESA.

#### OC Chinook Salmon Status and Trends

Although the Petitioners request that we list the entire OC Chinook salmon ESU, which consists of spring-run and fall-run components, the Petitioners focus their analysis of status and trends and threats on the spring-run component of the ESU. There is very little information in the petition about the status and trends and threats facing the fall-run component of the ESU.

The Petitioners assert that spring-run Chinook salmon populations in the OC Chinook salmon ESU have suffered significant declines in numbers from historical abundance. The Petitioners assert that former spring-run populations in the Siuslaw, Coos, and Salmon rivers are apparently extirpated and that small, very depressed populations of spring-run Chinook salmon remain in the Tillamook, Nestucca, Siletz, Alsea, and Coquille Rivers (Percy *et al.*, 1974; Nicholas and Hankin 1989; Kostow *et al.*, 1995; ODFW 2005; ODFW 2017; ODFW 2018 unpublished data; Rasmussen and Nott 2019). The Oregon Department of Fish

and Wildlife (ODFW, 2005) concluded that the Siletz spring-run Chinook salmon population, although small, passed all assessment criteria and was not considered at risk. ODFW (2005) further found that spring-run Chinook salmon populations in the Coquille and Alsea Rivers were sufficiently spatially diverse, independent, and free of hybridization, but due to chronically low adult returns were still considered potentially at risk. Citing the above information sources and adult counts at Winchester Dam, the Petitioners also assert that the North Umpqua River supports the only remaining large spring-run Chinook salmon population in the OC Chinook salmon ESU, but conclude recent surveys by the U.S. Forest Service and viability analyses by other researchers (Ratner and Lande, 1996) indicate the South Umpqua River run has been severely depleted.

The Petitioners also call attention to the Oregon Department of Fish and Wildlife's Coastal Multi-Species Conservation and Management Plan (CMP) (ODFW, 2014) and fish counts at Winchester Dam (ODFW, 2019) in support of their assertions that spring-run Chinook salmon populations are at risk of extinction. The CMP is the State of Oregon's plan for long-term conservation of naturally-produced salmon, steelhead, and trout on the Oregon Coast. The CMP identifies populations within the OC Chinook salmon ESU, and recognizes that while there are spring-run life history variants present in many of the OC Chinook salmon populations, only the North and South Umpqua Rivers support runs that are sufficiently isolated to be considered independent spring-run Chinook salmon populations (ODFW, 2014). Spring-run Chinook salmon in the North Umpqua River were found to be viable, although with a decreasing trend in abundance (1972–2010). South Umpqua spring-run Chinook salmon had a low extinction risk (<5 percent) and an increasing trend in abundance (1972–2010), but the population was considered non-viable because the current abundance was low and carrying capacity estimated to be less than necessary to maintain evolutionary potential to persist in future conditions (ODFW, 2014). The CMP assessments for OC Chinook salmon populations outside of the Umpqua Basin, which use the predominant fall-run Chinook salmon to evaluate population viability, found all populations were viable except for Elk River.

The Oregon Department of Fish and Wildlife maintains a fish counting station at Winchester Dam on the North Umpqua River. Although the most

recent (2011–2018) average Winchester Dam counts of spring-run Chinook salmon in the North Umpqua show an improvement over historic lows, these counts indicate a decreasing trend of natural-origin adult returns over the last 8 years (ODFW, 2019). Fieldwork conducted in 2019 by an inter-agency team confirmed that abundance of spring-run Chinook salmon in the South Umpqua remains low after recent declines (Kruzic, 2019).

Based on information provided by the Petitioners, as well as information readily available in our files, we find that a reasonable person would conclude current demographic risks indicate that OC Chinook salmon may be at risk of extinction and thus their status warrants further investigation.

#### *Analysis of ESA Section 4(a)(1) Factors for OC Chinook Salmon*

While the petition presents information on each of the ESA section 4(a)(1) factors, we find that the information presented, including information within our files, regarding the destruction, modification, or curtailment of the species habitat or range, the inadequacy of existing regulatory mechanisms, and other natural or manmade factors affecting the species continued existence is substantial enough to make a determination that a reasonable person would conclude that the species may warrant listing as endangered or threatened based on these factors alone. As such, we focus our below discussion on the evidence and present our evaluation of the information regarding these factors and their impact on the extinction risk of the species.

#### *The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range*

The Petitioners assert that OC Chinook salmon face numerous threats to suitable habitat, including impacts from historical and ongoing logging practices, agricultural practices, channelization, and urbanization. NMFS' OC coho salmon 5-year review (NMFS, 2022) evaluated the status of habitat threats over an area almost completely co-extensive with the range of OC Chinook salmon and concluded that degraded habitat conditions in this area continue to be of concern, particularly with regard to land use and development activities that affect the quality and accessibility of habitats and habitat-forming processes.

The Petitioners assert that habitat degradation due to logging and roads reduces stream shade, increases fine sediment levels, reduces levels of in-

stream large wood, and alters watershed hydrology, which is supported by similar conclusions in NMFS' 2011 Final Rule listing OC coho salmon under the ESA (76 FR 35755, June 20, 2011), describing habitat that is co-extensive with the range of OC Chinook salmon. The Petitioners specifically assert that extensive logging can be harmful to Chinook salmon populations by causing depletion of summer and early fall streamflows needed for adult migration, holding, and spawning. Perry and Jones (2017) found that after an initial delay, base streamflows were substantially decreased for decades in logged areas as compared to pre-logging conditions. The Petitioners also assert that timber harvest and road construction harm OC Chinook salmon by altering stream flow, increasing sediment loading, contaminant concentrations, and temperatures, and decreasing dissolved oxygen. References to NMFS' 2011 OC coho salmon listing (76 FR 35755, June 20, 2011) and U.S. Bureau of Land Management (USBLM) analysis of timber harvest in the Siletz River watershed (USBLM, 1996) support their assertion.

The Petitioners further assert that dams, water diversions, and other barriers impact OC Chinook salmon by blocking suitable riverine habitat, impeding migration, and reducing water quality and quantity. NMFS' 2011 OC coho listing concluded that fish passage has been blocked in many streams by improperly designed culverts and is limited in estuaries by tide gates in the range of the OC coho salmon ESU. The Petitioners assert that large dams significantly reduce the amount of spawning and rearing habitat accessible to migrating Chinook salmon. However, the Oregon Native Fish Status Report (ODFW, 2005) concluded that essentially all potential OC Chinook salmon habitat remains accessible (although recognizing this assessment did not capture fine-scale blockages, such those caused by culverts). The Petitioners also assert that dams (large and small), reservoirs, diversions, and other barriers can significantly delay upstream and downstream migration. The most recent NMFS 5-year review of OC coho salmon (NMFS, 2022) recognizes that impeded fish passage and habitat access is a concern in many watersheds within their range, although this is not considered a primary limiting factor.

The Petitioners assert that dams and diversions also have the potential to decrease downstream flows, and that decreased summer and fall baseflows can result in increased water temperatures that are harmful to OC

Chinook salmon. As referenced in the petition, Bottom *et al.* (1985) cited low streamflows and high summer temperatures exacerbated by water withdrawals as problems for many streams (notably Tillamook Bay tributaries and Alsea, Siletz, Siuslaw, and Umpqua Rivers). The 2022 NMFS 5-year review of OC coho salmon recognizes water quality and quantity as primary or secondary limiting factors for many coastal basins, and the Oregon CMP (ODFW, 2014) lists low flows and high temperatures as primary limiting factors for OC Chinook salmon.

The Petitioners also highlight other ongoing anthropogenic disturbances that may cause habitat degradation, including gravel mining, pollutants, and stream channelization, which is consistent with findings in NMFS' 2011 Final Rule to list OC coho salmon and limiting factors (particularly reduced habitat complexity) identified in the 2022 NMFS OC coho salmon 5-year review.

Based on information provided by the Petitioners, as well as information readily available in our files, we find that habitat destruction and curtailment of their range may be posing a threat to the continued existence of OC Chinook salmon.

#### *Inadequacy of Existing Regulatory Mechanisms*

The Petitioners assert that existing Federal and State regulatory mechanisms are not sufficient to protect and recover OC Chinook salmon and their habitat. Although the Petitioners found harvest to be a concern above, the focus of their discussion in this section is on regulatory mechanisms for habitat protection.

The Petitioners state that co-occurrence of OC Chinook salmon with other ESA-listed species does afford them some habitat benefits where their ranges overlap. The range of Chinook salmon overlaps substantially with listed OC coho salmon and therefore falls almost entirely within OC coho salmon designated critical habitat. However, the Petitioners assert that there is little evidence that improved habitat protections under the ESA since OC coho salmon were listed have resulted in actions sufficient to lead to recovery of either species.

The Petitioners state that the USBLM's resource management plans do not provide adequate protection for OC Chinook salmon. The Petitioners assert that allowable logging practices and aquatic conservation strategies under the resource management plans do not effectively protect OC Chinook salmon habitat. The Petitioners cite

NMFS' comments in its review of the draft Environmental Impact Statement for the revision of the resource management plans (NMFS, 2015b) and later comments by conservation groups (NFS, 2015; American Rivers *et al.*, 2016) to support their claim that the resource management plans are not sufficient to adequately maintain and restore riparian and aquatic habitat necessary for conservation of anadromous fish.

The Petitioners also assert that the U.S. Forest Service's forest plans do not provide adequate protection for OC Chinook salmon. The Petitioners contend that the National Forest Management Act does not effectively limit long-term impacts to salmon habitat in Oregon Coast watersheds because it does not prohibit the U.S. Forest Service from carrying out management actions and projects that harm the species or habitat. Petitioners also assert that National Forest Plans have limited ability to protect OC Chinook salmon habitat because National Forest lands make up a small portion of Oregon Coast watersheds relative to private lands.

The Petitioners further assert that the licensing process for non-Federal hydropower projects does not necessarily provide adequate protections for OC Chinook salmon. The Federal Power Act mandates that when issuing licenses the Federal Energy Regulatory Commission include conditions to protect, mitigate, and enhance fish and wildlife affected by hydropower projects. The Petitioners assert that although the Commission must seek recommendations from the USFWS and NMFS, the Commission can reject such measures if they determine there is not substantial evidence of need, and the timeline of most licenses (30–50 years) limits the opportunity for future improvements. Petitioners also assert that water quality protections under the Coastal Zone Management Act and Clean Water Act are not adequately protective of OC Chinook salmon habitat. The Petitioners cite to NOAA's and the Environmental Protection Agency's findings that Oregon's coastal nonpoint pollution control program is inadequate (NOAA and EPA, 2013), and NMFS' conclusion that Clean Water Act programs are not sufficient to protect Oregon Coast coho salmon habitat (NMFS, 2015).

The Petitioners additionally assert that State forest management is also not adequately protective of salmon habitat. The Petitioners cite NMFS' comments, from the 2011 Final Rule listing OC coho salmon under the ESA (76 FR 35755, June 20, 2011), that the Oregon

Forest Practices Act may not adequately protect OC coho salmon habitat in support of their assertion that it is therefore unlikely to protect OC Chinook salmon habitat. The Petitioners further point to an evaluation by Talberth and Fernandez (2015), which found the Oregon Forest Practices Act does not provide stream buffers in all areas adequate to protect water quality and habitat for fish and wildlife and allows clearcutting in areas prone to landslides and with cold-water fish habitat, in support of their conclusion that the Act does not adequately limit harmful clearcutting practices. The Petitioners also assert that the 2010 Northwest Oregon Forest Management Plan and the Elliot Forest Management Plan do not contain sufficient measures to manage or protect OC Chinook salmon and, in support of this claim, reference NMFS' 2011 OC coho listing Final Rule which stated NMFS was unable to conclude these plans provide for OC coho salmon habitat capable of supporting viable populations during both good and poor marine conditions.

The Petitioners point out that there have been various State watershed and salmon management plans with goals for protecting and recovering salmon, including the 1991 Coastal Chinook Salmon Plan, 1997 Oregon Coastal Salmon Restoration Initiative, Siletz and Alsea River Basin Fish Management Plans, 2006 Oregon Conservation Strategy, and 2014 Coastal Multispecies Conservation and Management Plan. However, Petitioners assert that despite all of these plans, OC Chinook salmon populations have continued to decline or remain at depressed levels, and State land managers continue to allow logging and other activities and programs that may harm salmon and degrade their habitat, indicating these plans are inadequate to protect OC Chinook salmon.

Based on information provided by the Petitioners, as well as information readily available in our files, we conclude there is sufficient indication that the inadequacy of existing regulatory mechanisms may be posing a threat to the continued existence of OC Chinook salmon.

#### *Other Natural or Manmade Factors Affecting Its Continued Existence*

##### *Hatcheries*

The Petitioners assert that fish hatcheries have negative impacts on OC Chinook salmon by causing competition in the wild between hatchery and wild fish, supporting mixed-stock fisheries that have disproportionately harmed wild Chinook salmon, and promoting

hybridization between spring- and fall-run Chinook salmon. The Petitioners assert that hatchery programs within the OC Chinook salmon ESU are intended for fisheries augmentation, and there are no conservation or reintroduction hatchery programs at this time.

The Oregon CMP (ODFW, 2014) has recognized hatcheries as a primary limiting factor for OC Chinook salmon in the Elk River, a secondary risk factor for stocks in the Salmon River, and a potential limiting factor for other OC Chinook salmon populations in the ESU. The risk associated with hatcheries as a limiting factor for these populations is primarily due to the potential genetic impacts of hatchery fish interbreeding with natural-origin fish on spawning grounds, although not specifically interbreeding between fall- and spring-run Chinook salmon. The potential for competition between naturally-produced and hatchery-origin fish is also recognized. However, the specific effects of coastal hatchery programs have not been systematically assessed (ODFW, 2014).

#### Climate Change and Ocean Conditions

The Petitioners also assert that ongoing threats of poor ocean conditions and climate change are likely to threaten the continued existence of OC Chinook salmon. As described in NMFS' 5-year reviews (Stout *et al.*, 2012; NMFS, 2016; NMFS, 2022) and ESA listing of OC coho salmon (76 FR 35755, June 20, 2011), variability in ocean conditions in the Pacific Northwest is a concern for the persistence of Oregon Coast salmonids because it is uncertain how populations will fare in periods of poor ocean survival when freshwater and estuarine habitats are degraded. The Petitioners also cite these NMFS sources to support their assertions that predicted effects of climate change are expected to negatively affect Oregon Coast salmonids through many different pathways, and cite the Oregon CMP (ODFW, 2014) in support of their statement that regional changes in climate and weather patterns will negatively impact Oregon coastal aquatic ecosystems and salmonids.

The Petitioners also assert that predicted climate change impacts on streamflows will be exacerbated by continued forest land use practices. The Petitioners cite studies demonstrating recent declines in Pacific Northwest streamflows and predicting increasing temperatures in downstream reaches (Luce and Holden, 2009; Isaak *et al.*, 2018) in support of their assertion that decreases in streamflow caused by logging will exacerbate streamflow

decreases and temperature increases likely to occur due to climate change.

Based on information provided by the Petitioners, as well as information readily available in our files, we conclude that hatcheries and climate change may be posing threats to the continued existence of OC Chinook salmon.

#### SONCC Chinook Salmon Status and Trends

Although the Petitioners request that we list the entire SONCC Chinook salmon ESU, which consists of spring-run and fall-run components, the Petitioners focus their analysis of status and trends and threats on the spring-run component of the ESU. There is very little information in the petition about the status and trends and threats facing the fall-run component of the ESU.

The Petitioners assert that spring-run Chinook salmon populations in the SONCC Chinook salmon ESU have suffered significant declines in numbers from historical abundance. The Petitioners cite findings by Nicholas and Hankin (1989) that all spring-run Chinook salmon populations on the Oregon coast are smaller than fall-run populations and are depressed from historical population sizes. The Petitioners present data from the Oregon Department of Fish and Wildlife (ODFW) that indicate a 25-year decline in abundance of spring-run Chinook salmon on the Rogue River (1981–2006) (ODFW, 2019). During a 10-year period (1970–1979) that spans the construction of the William Jess Dam (1977) on the Rogue River, an average of 28,052 adult spring-run Chinook salmon were counted annually. ODFW (2019) estimated that there were 10,240 adult spring-run Chinook salmon in 2017 and that the annual average for the years 2008–2017 was 9,663.

The Petitioners note that following ODFW's adoption of the Rogue Spring Chinook Conservation Plan in 2007, the average annual abundance of natural-origin adult spring-run Chinook salmon increased from 7,596 to 9,663 in 2017. The Petitioners assert that this increase of spring-run Chinook salmon in the Rogue River was likely a result of the removal of the Gold Hill, Savage Rapids, and Gold Ray dams, which allowed heterozygous and homozygous fall-run Chinook salmon to ascend upriver rapidly and spawn with homozygous spring-run Chinook. In the Final Rogue Spring Chinook Salmon Conservation Plan Comprehensive Assessment and Update, ODFW found that while the status of spring-run Chinook salmon improved over the past decade the 10-year average is below the desired

threshold of 15,000 naturally produced adult spring-run Chinook salmon returning to the Rogue River annually (ODFW, 2019). The Petitioners also call attention to the Cole M. Rivers Hatchery and Genetic Management Plan that reports the smolt to adult return rate of Cole M. Rivers Hatchery spring-run Chinook salmon in the Rogue River has been below 1 percent since 2002 (ODFW, 2016). The Petitioners assert that the smolt to adult return rate for natural fish is also likely low.

The Petitioners further assert that the abundance of spring-run Chinook salmon in the Rogue River may actually be lower than reported. Hess *et al.* (2016), Prince *et al.* (2017) and Thompson *et al.* (2019) have studied the relationship between genetic material from a portion of the genome that includes the Greb1L gene (otherwise referred to as the Greb1L region of the genome) and run-timing in Chinook salmon and steelhead. The authors characterized the Greb1L region as two alleles (different forms) and three genotypes (different combinations of the alleles): Individuals with two early run-timing alleles (early-run homozygotes), individuals with two late run-timing alleles (late-run homozygotes), and individuals with one allele for the early and one for the late run-timing (heterozygotes). Thompson *et al.* (2019) asserted that there is a considerable amount of interbreeding between spring-run and fall-run Chinook salmon in the Rogue River as a result of dam construction. Thompson *et al.* (2019) analyzed samples from 2004 and reported that many of the spring-run Chinook salmon counted at Gold Ray dam were in fact heterozygotes.

The Petitioners also call attention to a declining trend in abundance of adult spring-run Chinook salmon in the Smith River. The Petitioners cite data from snorkel surveys of spring-run Chinook salmon in the South Fork, Middle Fork, and North Fork of the Smith River from 1982 to 2018 (Hanson, 2018). Hanson (2018) found that the number of adult spring-run Chinook salmon counted per mile (density) has been declining since survey counts peaked in 1996 at a density of 2.5 salmon per mile. Hanson (2018) reported that adult spring-run Chinook salmon densities have remained at less than 0.3 salmon per mile since 2007 (Hanson, 2018). The Petitioners assert that this decline in spring-run Chinook salmon indicates that the population within the Smith River is threatened with extinction.

Based on information provided by the Petitioners, as well as information readily available in our files, we conclude that SONCC Chinook salmon



populations may be at risk of extinction and thus their status warrants further investigation.

*Analysis of ESA Section 4(a)(1) Factors for SONCC Chinook Salmon*

While the petition presents information on each of the ESA section 4(a)(1) factors, we find that the information presented, including information within our files, regarding the destruction, modification, or curtailment of the species habitat or range, the inadequacy of existing regulatory mechanisms, and other natural or manmade factors affecting the species continued existence is substantial enough to make a determination that a reasonable person would conclude that the species may warrant listing as endangered or threatened based on these factors alone. As such, we focus our below discussion on the evidence and present our evaluation of the information regarding these factors and their impact on the extinction risk of the species.

*The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range*

The Petitioners assert that SONCC Chinook salmon face numerous threats to suitable habitat, including impacts from dams, logging practices, road building, and mining operations. The Army Corps of Engineers completed construction of William Jess Dam/Lost Creek Reservoir on the upper Rogue River in 1977. The Petitioners cite the Rogue Spring Chinook Salmon Conservation Plan Comprehensive Assessment and Update (ODFW, 2019) in support of their assertion that artificially enhanced summer stream flows from Lost Creek Reservoir are adversely affecting Chinook salmon. ODFW (2019) found that enhanced summer stream flows allow fall-run Chinook salmon to spawn upstream in habitat that historically was utilized primarily by Chinook salmon.

The Petitioners assert that artificially augmented high flows in August and September in the Rogue River may reduce egg to fry survival of spring-run Chinook salmon. If spring-run Chinook salmon spawn during high river flows in September, redds may be dewatered and embryos desiccated when releases from the Lost Creek Reservoir decrease during the reservoir fill season, which begins in January (ODFW, 2019). ODFW (2019) states that egg to fry survival has likely decreased as a result of redds being dewatered.

The Petitioners also assert that other anthropogenic disturbances have degraded Chinook salmon spawning

habitat in the Rogue and Smith Rivers. Specifically, the Petitioners assert that increased fine sediments due to logging, road building, and mining have adversely affected spawning habitat which is supported by similar conclusions in NMFS' 1997 final rule listing the SONCC coho salmon ESU under the ESA (62 FR 24588, May 6, 1997), describing habitat that is co-extensive with the range of SONCC Chinook salmon.

NMFS' most recent SONCC coho salmon 5-year review (NMFS, 2016) evaluated the status of habitat threats over an area that includes the range of SONCC Chinook salmon and concluded that degraded habitat conditions in this area continue to be of concern, particularly with regard to insufficient instream flow, unsuitable water temperatures, and insufficient rearing habitat due to a lack of floodplain and channel structure. While restoration and regulatory actions have been undertaken to improve freshwater and estuary habitat conditions in the SONCC coho salmon ESU, habitat concerns remain throughout the range of the ESU particularly in regards to water quality, water quantity, and rearing habitat.

Based on information provided by the Petitioners, as well as information readily available in our files, we conclude that habitat destruction and curtailment of their range may be posing a threat to the continued existence of SONCC Chinook salmon.

*Inadequacy of Existing Regulatory Mechanisms*

The Petitioners assert that existing Federal and State regulatory mechanisms are not sufficient to protect and recover SONCC Chinook salmon and their habitat. The Petitioners state that the Oregon Native Fish Conservation Policy, The Rogue Spring Chinook Salmon Conservation Plan, and the Coles M. Rivers Hatchery and Genetic Management Plan do not provide safeguards to stabilize or reverse increases in Chinook salmon heterozygous for run timing. The Petitioners assert that insufficient measures have been taken to prevent the interbreeding between naturally produced Chinook salmon and hatchery produced Chinook salmon from the Cole M. Rivers Hatchery. The Petitioners further assert that the Rogue Fall Chinook Conservation Plan (ODFW, 2007) does not adequately address the risks of interbreeding with spring-run fish as a result of artificially augmented summer flows (ODFW, 2013).

The Petitioners note that Chinook salmon on the Rogue River are not listed as threatened or endangered under the

Oregon State Endangered Species Act. The Petitioners assert that while the Rogue Spring Chinook Species Management Unit/SONCC ESU is on the Oregon Sensitive Species List, the designation does not provide regulatory protection for SONCC Chinook salmon.

The Petitioners assert that the Oregon Forest Practices Act and California forest practice rules do not provide adequate habitat protections for SONCC Chinook salmon. In support of their assertions the Petitioners refer to NMFS' 5-year review for SONCC coho salmon (NMFS, 2016). NMFS' (2016) SONCC coho salmon 5-year review evaluated the inadequacy of existing regulatory mechanisms over an area in large part co-extensive with the range of SONCC Chinook salmon and concluded that the Oregon Forest Practices Act does not provide adequate protection for SONCC coho salmon. NMFS (2016) noted that particular areas of concern include: (1) whether the widths of riparian management areas (RMAs) are sufficient to fully protect riparian functions and stream habitats; (2) whether operations allowed within RMAs will degrade stream habitats; (3) operations on high-risk landslide sites; and (4) watershed-scale effects. NMFS (2016) similarly expressed concerns with the adequacy of California's forest practice rules to provide protection for SONCC coho salmon. Specifically, NMFS recommended the addition of the following standards to California's forest practice rules: (1) provide Class II-S (standard) streams with the same protections afforded Class II-L (large) streams, (2) include provisions to ensure hydrologic disconnection between logging roads and streams, and (3) include provisions to avoid hauling logs on hydrologically connected streams during winter periods. Furthermore, NMFS concluded that the effects of past and present timber harvest activities in California continue to be an ongoing threat to the SONCC coho salmon ESU.

Based on information provided by the Petitioners, as well as information readily available in our files, we find that the inadequacy of existing regulatory mechanisms may be posing a threat to the continued existence of SONCC Chinook salmon.

*Other Natural or Manmade Factors Affecting Its Continued Existence*

*Hatcheries*

The Petitioners assert that the Cole M. Rivers Hatchery threatens the future viability of Chinook salmon in the Rogue River. The Petitioners assert that operation of the Cole M. Rivers Hatchery poses a risk to natural origin

Chinook salmon due to multiple factors including competition, predation, disease, and interbreeding. The Petitioners assert that the release of an average of 1.6 million Chinook salmon annually from the Cole M. Rivers Hatchery results in increased competition between naturally produced Chinook salmon and the more abundant artificially produced salmonids. As previously mentioned the Petitioners assert that hatchery produced coho salmon and steelhead prey upon natural origin Chinook salmon fry. The Petitioners further note that the hatchery is a known source of disease in Chinook salmon. Amandi *et al.* (1982) found that Chinook salmon in the Cole M. Rivers Hatchery were found to be infected with *F. columnaris* and that pathogen concentrations in the outflow from the hatchery were greater than concentrations from the other water bodies sampled. ODFW (2019) reported that it is unknown if the infected salmon were infected with *F. columnaris* before entering the hatchery or if the salmon contracted *F. columnaris* after entering the hatchery.

#### Climate Change and Ocean Conditions

The Petitioners also assert that ongoing threats of poor ocean conditions and climate change are likely to threaten the continued existence of SONCC Chinook salmon. As described in NMFS' Oregon Coast coho salmon 5-year review (Stout *et al.*, 2012; 76 FR 35755, June 20, 2011), variability in ocean conditions in the Pacific Northwest is a concern for the persistence of coastal Oregon Chinook salmon. The Petitioners also cite Stout *et al.* (2012) in support of assertions that predicted effects of climate change are expected to negatively affect coastal Oregon salmonids through many different factors. The Petitioners cite the Oregon Coastal Management Plan (ODFW, 2014) in support of their assertions that regional changes in climate and weather patterns will negatively impact SONCC coastal aquatic ecosystems and salmonids. The Petitioners cite Reiman and Isaaks (2010) to support their assertions that

variable weather and warming events will become more frequent in the Pacific Northwest and continue to threaten SONCC Chinook salmon.

Based on information provided by the Petitioners, as well as information readily available in our files, we find that hatcheries and climate change may be posing threats to the continued existence of SONCC Chinook salmon.

#### Petition Finding

After reviewing the information contained in the petition, as well as information readily available in our files, we conclude that the petition presents substantial scientific information indicating that the petitioned action to list the OC and SONCC Chinook salmon ESUs as threatened or endangered under the ESA may be warranted, and that the petition does not present substantial scientific and commercial information indicating that the petitioned action to list only the spring-run components of the OC and SONCC Chinook salmon ESUs may be warranted. Therefore, in accordance with section 4(b)(3)(A) of the ESA and NMFS' implementing regulations (50 CFR 424.14(h)(2)), we will commence a status review to determine whether the OC Chinook salmon ESU or the SONCC Chinook salmon ESU is in danger of extinction throughout all or a significant portion of their range, or likely to become so within the foreseeable future. After the conclusion of the status review, we will make a finding as to whether listing the OC or SONCC Chinook salmon ESU as endangered or threatened is warranted as required by section 4(b)(3)(B) of the ESA.

#### Information Solicited

To ensure that our status reviews are informed by the best available scientific and commercial data, we are opening a 60-day public comment period to solicit information on the OC and SONCC Chinook salmon ESUs. We request information from the public, concerned governmental agencies, Native American tribes, the scientific community, agricultural and forestry

groups, conservation groups, fishing groups, industry, or any other interested parties concerning the current and/or historical status of OC and SONCC Chinook salmon ESUs. Specifically, we request information regarding: (1) species abundance; (2) species productivity; (3) species distribution or population spatial structure; (4) patterns of phenotypic, genotypic, and life history diversity; (5) habitat conditions and associated limiting factors and threats; (6) ongoing or planned efforts to protect and restore the species and their habitats; (7) information on the adequacy of existing regulatory mechanisms, whether protections are being implemented, and whether they are proving effective in conserving the species; (8) data concerning the status and trends of identified limiting factors or threats; (9) information on targeted harvest (commercial and recreational) and bycatch of the species; (10) other new information, data, or corrections including, but not limited to, taxonomic or nomenclatural changes; and (11) information concerning the impacts of environmental variability and climate change on survival, recruitment, distribution, and/or extinction risk.

We request that all information be accompanied by: (1) supporting documentation such as maps, bibliographic references, or reprints of pertinent publications; and (2) the submitter's name, and any association, institution, or business that the person represents.

#### References

A complete list of all references cited herein is available upon request (See **FOR FURTHER INFORMATION CONTACT**).

**Authority:** The authority for this action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: January 4, 2023.

**Samuel D. Rauch, III,**

*Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.*

[FR Doc. 2023-00214 Filed 1-10-23; 8:45 am]

**BILLING CODE 3510-22-P**

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

## DEPARTMENT OF AGRICULTURE

### Forest Service

#### Nebraska National Forests and Grasslands; Nebraska and South Dakota; Undesirable Plant Management EIS

**AGENCY:** Forest Service, Agriculture (USDA).

**ACTION:** Notice of intent to prepare an environmental impact statement.

**SUMMARY:** The Forest Service, USDA, will prepare an Environmental Impact Statement (EIS) to address undesirable plant management for the Nebraska National Forests and Grasslands (Forests). This environmental analysis is necessary to protect, maintain, or restore native plant communities from the negative effects of undesirable plants. The proposal will analyze an update of the Forests' guidance from the May 1993 Environmental Assessment (EA) for the Management of Undesirable Plant Species.

**DATES:** Comments concerning the scope of the analysis must be received by February 10, 2023. The draft environmental impact statement is expected June 2023 and the final environmental impact statement is expected March 2024.

**ADDRESSES:** Send written comments to Nebraska National Forests and Grasslands, 125 North Main Street, Chadron, NE 69337. Comments may also be sent electronically to <https://www.fs.usda.gov/project/?project=62500>, or via facsimile to 308-432-0309.

**FOR FURTHER INFORMATION CONTACT:** Kimberly Dolatta at 308-432-0323 or [kimberly.dolatta@usda.gov](mailto:kimberly.dolatta@usda.gov). Individuals who use telecommunication devices for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1-800-877-8339, 24 hours a day, every day of the year, including holidays.

#### SUPPLEMENTARY INFORMATION:

##### Purpose and Need for Action

Existing undesirable plant species management on the Forests is based on environmental analyses that did not analyze management strategies such as aerial application of herbicides, use of prescribed fire, or the treatment of aquatic invasive species. Existing policies for undesirable plant management on the Forests do not address new undesirable plant species, nor do they provide modernized tools and practices for swift management of infestations. Failure to control or eradicate infestations of undesirable plants alters wildlife habitat, decreases wildlife and livestock forage, reduces species diversity, increases soil erosion due to a decrease in surface cover, promotes undesirable monocultures, and potentially alters the fire return interval. Additionally, some undesirable plants are known to be toxic to animals and/or humans.

The Forest Service must update past environmental analyses to include guidance for management strategies on the Forests to protect, maintain, or restore native plant communities from the negative effects of undesirable plants. This will include consideration of practices to support early detection, rapid assessment, and rapid response to new infestations, new undesirable plant species, landscape-scale disturbances, and the availability of new management tools.

##### Proposed Action

The Forest Service proposes to update the Forests' guidance for plant management strategies through an environmental analysis for the management of invasive, noxious, alien, non-native, and undesirable native plant species. Section 2814 of title 7 of the United States Code defines the term "undesirable plants" as plant species that are classified as undesirable, noxious, harmful, exotic, injurious, or poisonous, pursuant to State or Federal law. This definition does not include the management of undesirable native plant species, but the Forests intend to include the management of specific native plants for the purpose of maintaining established desired conditions described in the Forests' land and resource management plan. Early detection and rapid response, control methods and preventative

measures, rehabilitation and restoration, and implementation and effectiveness monitoring would be designed to allow prompt treatment of undesirable plant infestations.

Proposed control methods would include, but are not limited to (1) biological control, such as the release of host-specific natural enemies or targeted grazing; (2) chemical control using agency approved herbicides that target undesirable plant species; (3) mechanical techniques, such as mowing, cutting, or pulling; and (4) prescribed fire conducted in accordance with fire suppression and prescribed burn management policy. Control methods would be employed alone or in combination to achieve the most effective control. Treatment methods would be based on the extent, location, type, and character of an infestation and would be implemented using design criteria developed to ensure ecosystem health. Treated acre totals could be those that are treated a single time or multiple times annually using a combination of methods. Rehabilitation and restoration actions would be designed and implemented based on the conditions found in and around infested areas.

The Forest Service would like to schedule implementation to begin in 2024. Forest-wide combined treatments of up to 100,000 acres annually over a 15-year period would be expected. Further information is available on the project website: <https://www.fs.usda.gov/project/?project=62500>.

##### Expected Impacts

Preliminary issues being considered by the Forest Service include the effects of undesirable plant management treatments on native vegetation, biological diversity, natural productivity, and habitat structure; threatened, endangered, or sensitive species and their habitats; soils, water, and aquatic resources; and on human health. Commenters are encouraged to identify additional issues.

##### Responsible Official

The Responsible Official will be the Forest Supervisor for the Nebraska National Forests and Grasslands.

### Scoping Comments and the Objection Process

This notice of intent initiates the scoping process, which guides the development of the EIS. The agency is requesting comments on potential alternatives and impacts, and identification of any relevant information, studies, or analyses of any kind concerning impacts affecting the quality of the human environment.

It is important that reviewers provide their comments at such times and in such manner that they are useful to the agency's preparation of the EIS. Therefore, comments should be provided prior to the close of the comment period and should clearly articulate the reviewer's concerns, remedies for those concerns, other recommendations, general support, and/or opportunities to further clarify information. Commenting during scoping and any other designated opportunity to comment provided by the Responsible Official will also establish standing to object once the final EIS and Draft Record of Decision have been published. This project is subject to the agency's Project Level Predecisional Administrative Review Process (36 CFR part 218, subparts A and B). Comments received in response to this solicitation, including names and addresses of those who comment, will be part of the public record for this proposed action. Comments submitted anonymously will be accepted and considered, however, they will not be used to establish standing for the objection process.

### Permits, Licenses or Other Authorizations Required

Pesticide (herbicide) applicators must be certified and licensed by the South Dakota Department of Agriculture and Natural Resources (South Dakota Codified Law § 38–21). The Nebraska Department of Agriculture is responsible for the certification and licensing of pesticide applicators in Nebraska under the Nebraska Pesticide Act (Nebraska Statute 2–2622).

### Nature of Decision To Be Made

Given the purpose and need, the Responsible Official will review the proposed action, the other alternatives (including the no-action alternative), and the environmental consequences in order to determine whether to expand current guidance to control and manage undesirable plant species; what control methods or herbicides would be used; what protection and monitoring measures would be required; and whether to include an adaptive

management approach to address future spread of undesirable plant species.

The decision will consider the Forests' land and resource management plan direction for achievement of desired conditions for native vegetation and habitats. Reconsideration of other existing project-level decisions, programmatic decisions, or additional guidance for future forest management activities are beyond the scope of this document.

Dated: January 5, 2023.

**Troy Heithecker,**

*Associate Deputy Chief, National Forest System.*

[FR Doc. 2023–00361 Filed 1–10–23; 8:45 am]

**BILLING CODE 3411–15–P**

## COMMISSION ON CIVIL RIGHTS

### Agency Information Collection Activities; Proposals, Submissions, and Approvals: Qualification Information for Candidates to Advisory Committees

**AGENCY:** U.S. Commission on Civil Rights.

**ACTION:** Notice.

**SUMMARY:** The U.S. Commission on Civil Rights (“Commission” or “USCCR”) is announcing an opportunity for public comment on the proposed collection of qualification information for advisory committee candidates by the agency. Under the Paperwork Reduction Act (“PRA”), Federal agencies are required to publish notice in the **Federal Register** concerning each proposed collection of information, and to allow 60 days for public comment.

**DATES:** Comments must be received on or before March 7, 2023.

**ADDRESSES:** You may submit comments, identified by subject matter “Qualification Information for Candidates to Advisory Committees,” and by any of the following methods:

- You may electronically submit written comments to USCCR at [publicaffairs@usccr.gov](mailto:publicaffairs@usccr.gov) and/or [sccoziert@usccr.gov](mailto:sccoziert@usccr.gov).
- *Mail:* Sheryl Cozart, Senior Attorney-Advisor, Office of the General Counsel, Office of the General Counsel, U.S. Commission on Civil Rights, 1331 Pennsylvania Avenue NW, Suite 1150, Washington, DC 20425.
- *Hand Delivery/Courier:* Same as Mail above.

Please submit your comments using only one method. All comments must be submitted in English, or if not, accompanied by an English translation. Comments will be posted as received to

[www.usccr.gov/news/advisory-committees-news](http://www.usccr.gov/news/advisory-committees-news) and/or <https://www.usccr.gov/news/commission-news>.

**FOR FURTHER INFORMATION CONTACT:** Sheryl Cozart, Senior Attorney-Advisor, Office of the General Counsel, Office of the General Counsel, U.S. Commission on Civil Rights, 1331 Pennsylvania Avenue NW, Suite 1150, Washington, DC 20425; phone: 202–839–7255; email: [sccoziert@usccr.gov](mailto:sccoziert@usccr.gov).

**SUPPLEMENTARY INFORMATION:** Under the PRA, 44 U.S.C. 3501 *et seq.*, Federal agencies must obtain approval from the Office of Management and Budget (“OMB”) for each collection of information they conduct or sponsor. “Collection of Information” is defined in 44 U.S.C. 3502(3) and 5 CFR 1320.3 and includes agency requests or requirements that members of the public obtain or report information. Section 3506(c)(2)(A) of the PRA, 44 U.S.C. 3506(c)(2)(A), requires Federal agencies to provide a 60-day notice in the **Federal Register** concerning each proposed collection of information, before submitting the collection to OMB for approval. To comply with this requirement, the USCCR is publishing notice of the proposed collection of information listed below. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.<sup>1</sup>

*Title:* “Qualification Information for Candidates to Advisory Committees.” This is a request for a new OMB control number.

*Abstract:* The Commission studies civil rights issues and subsequently publishes reports with recommendations to inform the President, Congress, and the public. The USCCR's Advisory Committees were created to provide input and make recommendations to the Commission concerning discrimination and denial of equal protection of law, the right to vote, and related civil rights issues. The Commission was established by the Civil Rights Act of 1957, Public Law 85–315, and subsequently modified in the Civil Rights Commission Amendments Act of 1994, 42 U.S.C. 1975a. These laws direct the Commission to establish Advisory Committees for each state, the District of Columbia, and five U.S. territories. These non-discretionary, statutory Advisory Committees are subject to the Federal Advisory Committee Act (FACA), Public Law 92–463 codified as 5 U.S.C. app. 2.

<sup>1</sup> 44 U.S.C. 3512, 5 CFR 1320.5(b)(2)(i) and 1320.8(b)(3)(vi).

As noted above, the 56 Advisory Committees advise the Commission on civil rights issues that the Committees choose to evaluate. The Commission may also ask Advisory Committees to take up a civil rights topic in support of a Commission investigation. After a Committee's report is submitted, the Commission may invite the Advisory Committee Chair to discuss the report, including the findings and recommendations, at regularly scheduled Commission business meetings. The Commission may notify the U.S. Congressional delegation for the particular locale that the advisory committee within their jurisdiction has published a report. In addition, the Commission may distribute Committee reports to the federal, state, and local bodies that are identified in the Committee report. Lastly, individual Commissioners often attend the Advisory Committee meetings, which are open to the general public.

The USCCR identifies candidates for advisory committee membership through a variety of methods, including, but not limited to, public requests for nominations; recommendations from existing advisory committee members; consultations with knowledgeable persons outside the USCCR (academia, non-profits, other state or federal government agencies, academia, etc.); and Commissioners' and USCCR staff's professional knowledge of those experienced in civil rights. Following the identification process, the USCCR develops a list of proposed members with the relevant points of view needed to ensure membership balance. The USCCR Commissioners then vote to appoint individuals to serve four-year terms as Advisory Committee Members. Advisory Committee Members are generally classified as Representatives. Representatives provide the viewpoints of entities or recognizable groups and are expected to potentially represent a particular and known bias or perspective.

The collection of information is necessary to support the USCCR Advisory Committees by placing qualified individuals on them as members. Pursuant to the FACA, an agency must ensure that a committee is balanced with respect to the viewpoints represented and the functions to be performed by that committee. Consistent with this, in order to select individuals for potential membership on an advisory committee, the USCCR must determine that potential members are qualified to serve on an advisory committee and that the viewpoints are properly balanced on the committee.

USCCR staff would use the information collected to determine the members come from the rich and diverse backgrounds of all of the United States and its Territories that USCCR wishes to have represented on its Advisory Committees, to determine the civil rights experience and expertise of potential advisory committee members, and to ensure that the membership on a committee is balanced.

The USCCR seeks to collect the following information: Information that supports an individual's state or territory residency requirements, civil rights experience and expertise to serve on an advisory committee, including a letter discussing their qualifications, resume or curriculum vitae, and/or other similar biographical information documents such as name and address and social media handles. Additionally, the USCCR seeks to collect information that ensures membership balance (*e.g.*, represented viewpoint category), and that potential members broadly represent the demographics and/or viewpoints of the United States and its Territories' varied and diverse backgrounds including, but not limited to, education, occupation, political affiliation and/or ideology, race/ethnicity, national origin, gender, sexual orientation, disability status, age, religion, and veteran status.

With respect to the collection of information, the USCCR invites comments on:

- Whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information will have a practical use;
- The accuracy of the Commission's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
- Ways to enhance the quality, usefulness, and clarity of the information to be collected; and
- Ways to minimize the burden of collection of information on those who are to respond, including through the use of appropriate automated electronic, mechanical, or other technological collection techniques or other forms of information technology; *e.g.*, permitting electronic submission of responses.

You should submit only information that you wish to make available publicly. If you wish the Commission to consider information that you believe is exempt from disclosure under the Freedom of Information Act, a petition for confidential treatment of the exempt information may be submitted according

to the procedures established in § 704.1 of the Commission's regulations.<sup>2</sup>

The Commission reserves the right, but shall have no obligation, to review, pre-screen, filter, redact, refuse or remove any or all of your submission from <http://www.USCCR.gov> or other USCCR website to which it posts comments that it may deem to be inappropriate for publication, such as obscene language. All submissions that have been redacted or removed that contain comments on the merits of the Information Collection Request will be retained in the public comment file and will be considered as required under the Administrative Procedure Act and other applicable laws, and may be accessible under the Freedom of Information Act.

**Burden Statement:** The respondent burden for this collection is estimated to be as follows for each currently vacant Advisory Committee:

**Estimated Number of Respondents:** 22.

**Estimated Average Burden Hours per Respondent:** 1.5 hours.

**Estimated Total Annual Burden Hours:** 33 hours.

**Frequency of Collection:** As needed.

There are no capital costs or operating and maintenance costs associated with this collection.

(Authority: 44 U.S.C. 3501 *et seq.*)

Dated: January 6, 2022.

**David Ganz,**

*General Counsel, USCCR.*

[FR Doc. 2023-00371 Filed 1-10-23; 8:45 am]

**BILLING CODE 6335-01-P**

## DEPARTMENT OF COMMERCE

### Foreign-Trade Zones Board

[B-43-2022]

#### **Foreign-Trade Zone (FTZ) 27—Boston, Massachusetts; Authorization of Production Activity, Wyeth Pharmaceuticals, LLC (Shingles and Flu Vaccines), Andover, Massachusetts**

On September 8, 2022, Wyeth Pharmaceuticals, LLC (Wyeth) submitted a notification of proposed production activity to the FTZ Board for its facility within Subzone 27R, in Andover, Massachusetts.

The notification was processed in accordance with the regulations of the FTZ Board (15 CFR part 400), including notice in the **Federal Register** inviting public comment (87 FR 56928, September 16, 2022). On January 6, 2023, the applicant was notified of the

<sup>2</sup> 45 CFR 704.1.

FTZ Board's decision that no further review of the activity is warranted at this time. The production activity described in the notification was authorized, subject to the FTZ Act and the FTZ Board's regulations, including Section 400.14.

Dated: January 6, 2023.

**Elizabeth Whiteman,**

*Acting Executive Secretary.*

[FR Doc. 2023-00355 Filed 1-10-23; 8:45 am]

**BILLING CODE 3510-DS-P**

## DEPARTMENT OF COMMERCE

### Bureau of Industry and Security

#### Emerging Technology Technical Advisory Committee; Notice of Partially Closed Meeting

The Emerging Technology Technical Advisory Committee (ETTAC) will meet on January 27, 2023, at 9 a.m., (Eastern Standard Time) in the Herbert C. Hoover Building, Room 3884, 1401 Constitution Avenue NW, Washington, DC (enter through Main Entrance on 14th Street between Constitution and Pennsylvania Avenues). The Committee advises the Office of the Assistant Secretary for Export Administration on the identification of emerging and foundational technologies with potential dual-use applications as early as possible in their developmental stages both within the United States and abroad.

#### Agenda

*Closed Session: 9:30 a.m.–2:30 p.m.*

1. Discussion of matters determined to be exempt from the provisions relating to public meetings found in 5 U.S.C. app. §§ 10(a)(1) and 10(a)(3).

*Open Session: 2:40 p.m.–4:00 p.m.*

2. Welcome and Introductions.
3. Introducing Speaker from Pew Research Center.
4. Presentation: Artificial Intelligence and Society: What Do People Say? Questions and Answers.
5. Public comments.
6. Announcements.

The open session will be accessible via teleconference. To join the conference, submit inquiries to Ms. Yvette Springer at [Yvette.Springer@bis.doc.gov](mailto:Yvette.Springer@bis.doc.gov) no later than January 20, 2023.

A limited number of seats will be available for the public session. Reservations are not accepted. To the extent that time permits, members of the public may present oral statements to

the Committee. The public may submit written statements at any time before or after the meeting. However, to facilitate the distribution of public presentation materials to the Committee members, the Committee suggests that presenters forward the public presentation materials prior to the meeting to Ms. Springer via email.

The Assistant Secretary for Administration, with the concurrence of the delegate of the General Counsel, formally determined on October 20, 2022, pursuant to Section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. app. § 10(d)), that the portion of the meeting dealing with pre-decisional changes to the Commerce Control List and the U.S. export control policies shall be exempt from the provisions relating to public meetings found in 5 U.S.C. app. §§ 10(a)(1) and 10(a)(3). The remaining portions of the meeting will be open to the public.

For more information, contact Ms. Springer via email.

**Yvette Springer,**

*Committee Liaison Officer.*

[FR Doc. 2023-00311 Filed 1-10-23; 8:45 am]

**BILLING CODE 3510-JT-P**

## DEPARTMENT OF COMMERCE

### International Trade Administration

[A-570-898]

#### Chlorinated Isocyanurates From the People's Republic of China: Final Results of Antidumping Duty Administrative Review; 2020-2021

**AGENCY:** Enforcement and Compliance, International Trade Administration, Department of Commerce.

**SUMMARY:** The U.S. Department of Commerce (Commerce) determines that Heze Huayi Chemical Co., Ltd. (Heze Huayi) and Juancheng Kangtai Chemical Co., Ltd. (Kangtai) sold chlorinated isocyanurates (chlorinated isos) from the People's Republic of China (China) at less than normal value during the period of review (POR) June 1, 2020, through May 31, 2021.

**DATES:** Applicable January 11, 2023.

**FOR FURTHER INFORMATION CONTACT:** Sean Carey, AD/CVD Operations, Office VII, Enforcement and Compliance, International Trade Administration, U.S. Department of Commerce, 1401 Constitution Avenue NW, Washington, DC 20230; telephone: (202) 482-3964.

#### SUPPLEMENTARY INFORMATION:

##### Background

The petitioners in this proceeding are Bio-lab, Inc., Clearon Corp., and

Occidental Chemical Corp. (collectively, the petitioners). The mandatory respondents in this administrative review are Heze Huayi and Kangtai. On July 12, 2022, Commerce published its *Preliminary Results*.<sup>1</sup> For events subsequent to the *Preliminary Results*, see the Issues and Decision Memorandum.<sup>2</sup> On October 12, 2022,<sup>3</sup> in accordance with section 751(a)(3)(A) of the Tariff Act of 1930, as amended (the Act), Commerce extended the deadline for issuing these final results until January 3, 2023.

#### Scope of the Order

The products covered by the order are chlorinated isos, which are derivatives of cyanuric acid, described as chlorinated s-triazine triones. For a full description of the scope of the order, see the Issues and Decision Memorandum.<sup>4</sup>

#### Analysis of Comments Received

All issues raised by interested parties in briefs are addressed in the Issues and Decision Memorandum. A list of the issues addressed in the Issues and Decision Memorandum is provided in the appendix to this notice. The Issues and Decision Memorandum is a public document and is on file electronically via Enforcement and Compliance's Antidumping and Countervailing Duty Centralized Electronic Service System (ACCESS). ACCESS is available to registered users at <https://access.trade.gov>. In addition, a complete version of the Issues and Decision Memorandum can be accessed directly at <https://access.trade.gov/public/FRNoticesListLayout.aspx>.

#### Separate Rate Respondents

In the *Preliminary Results*, we found that Heze Huayi and Kangtai demonstrated their eligibility for a separate rate.<sup>5</sup> We received no arguments since the issuance of the *Preliminary Results* that provide a basis for reconsideration of these determinations. Therefore, for the final results, we continue to find that Heze

<sup>1</sup> See *Chlorinated Isocyanurates from the People's Republic of China: Preliminary Results of Antidumping Administrative Review; 2020-2021*, 87 FR 41286 (July 12, 2022) (*Preliminary Results*), and accompanying Preliminary Decision Memorandum (PDM).

<sup>2</sup> See Memorandum, "Issues and Decision Memorandum for the Final Results of the Antidumping Duty Administrative Review: Chlorinated Isocyanurates from the People's Republic of China; 2020-2021," dated concurrently with, and hereby adopted by, this notice (Issues and Decision Memorandum).

<sup>3</sup> See Memorandum, "Extension of Deadline for Final Results of Antidumping Duty Administrative Review," dated October 12, 2022.

<sup>4</sup> See *Preliminary Results* PDM at 2-3.

<sup>5</sup> See *Preliminary Results*, 87 FR at 41286-87.

Huayi and Kangtai are each eligible for a separate rate. Consistent with our assessment practice in non-market economy (NME) administrative reviews, Commerce will issue appropriate instructions to U.S. Customs and Border Protection (CBP) based on these final results.<sup>6</sup>

**China-Wide Entity**

Pursuant to Commerce’s assessment practice, if Commerce determines that an exporter had no shipments of the subject merchandise, any suspended entries that entered under that exporter’s case number (*i.e.*, at that exporter’s rate) will be liquidated at the China-wide entity rate.<sup>7</sup> Commerce’s policy regarding the conditional review of the China-wide entity applies to this administrative review.<sup>8</sup> Under this policy, the China-wide entity will not be under review unless a party specifically requests, or Commerce self-initiates, a review of the entity. Because no party requested a review of the China-wide entity, we did not review the entity in this segment of the proceeding. Thus, the China-wide entity’s rate (*i.e.*, 285.63 percent) did not change.

**Final Results of Review**

Commerce determines that the following weighted-average dumping margins exist for Heze Huayi and Kangtai for the period June 1, 2020, through May 31, 2021:

Exporter	Weighted-average dumping margin (percent)
Heze Huayi Chemical Co., Ltd ... Juancheng Kangtai Chemical Co., Ltd .....	60.73 83.27

**Assessment Rates**

Pursuant to section 751(a)(2)(C) of the Act and 19 CFR 351.212(b), Commerce has determined, and CBP shall assess, antidumping duties on all appropriate entries covered by this review. Commerce intends to issue assessment

<sup>6</sup> See *Non-Market Economy Antidumping Proceedings: Assessment of Antidumping Duties*, 76 FR 65694, 65694–95 (October 24, 2011) (*NME Assessment*); see also the “Assessment Rates” section, *infra*.

<sup>7</sup> See *NME Assessment*. For an explanation on the derivation of the China-wide rate, see *Notice of Final Determination of Sales at Less Than Fair Value: Chlorinated Isocyanurates from the People’s Republic of China*, 70 FR 24502, 24505 (May 10, 2005).

<sup>8</sup> See *Antidumping Proceedings: Announcement of Change in Department Practice for Respondent Selection in Antidumping Duty Proceedings and Conditional Review of the Nonmarket Economy Entity in NME Antidumping Duty Proceedings*, 78 FR 65963 (November 4, 2013).

instructions to CBP no earlier than 35 days after the date of publication of the final results of this review in the **Federal Register**. If a timely summons is filed at the U.S. Court of International Trade, the assessment instructions will direct CBP not to liquidate relevant entries until the time for parties to file a request for a statutory injunction has expired (*i.e.*, within 90 days of publication).

For the individually-examined respondent in this review which has a final weighted-average dumping margin that is not zero or *de minimis* (*i.e.*, less than 0.5 percent), we will calculate importer- (or customer-) specific per-unit duty assessment rates based on the ratio of the total amount of dumping calculated for the importer’s (or customer’s) examined sales to the total sales quantity associated with those sales, in accordance with 19 CFR 351.212(b)(1).<sup>9</sup> We will also calculate (estimated) *ad valorem* importer-specific assessment rates with which to determine whether the per-unit assessment rates are *de minimis*. Where either a respondent’s weighted-average dumping margin is zero or *de minimis*, or an importer- (or customer-) specific assessment rate is zero or *de minimis*, we will instruct CBP to liquidate the appropriate entries without regard to antidumping duties.<sup>10</sup>

**Cash Deposit Requirements**

The following cash deposit requirements will be effective upon publication of the final results of this administrative review for shipments of the subject merchandise from China entered, or withdrawn from warehouse, for consumption on or after the publication date, as provided by section 751(a)(2)(C) of the Act: (1) for the exporters listed above, the cash deposit rate will be the rate established in the final results of this review (except, if the rate is zero or *de minimis*, a zero cash deposit rate will be required for that company); (2) for previously investigated or reviewed China and non-China exporters not listed above that have separate rates, the cash deposit rate will continue to be the existing producer/exporter-specific rate published for the most recent period; (3) for all China exporters of subject merchandise that have not been found to be eligible for a separate rate, the cash deposit rate will be the China-wide rate

<sup>9</sup> See *Certain Activated Carbon from the People’s Republic of China: Final Results and Partial Rescission of Second Antidumping Duty Administrative Review*, 75 FR 70208, 70211 (November 17, 2010), and accompanying Issues and Decision Memorandum at Comment 3.

<sup>10</sup> See 19 CFR 351.106(c)(2).

of 285.63 percent; and (4) for all non-China exporters of subject merchandise that have not received their own rate, the cash deposit rate will be the rate applicable to the China exporter(s) that supplied that non-China exporter. These deposit requirements, when imposed, shall remain in effect until further notice.

**Disclosure**

We intend to disclose the calculations performed regarding these final results within five days of the date of publication of this notice to parties in this proceeding in accordance with 19 CFR 351.224(b).

**Notification to Importers**

This notice serves as a final reminder to importers of their responsibility under 19 CFR 351.402(f) to file a certificate regarding the reimbursement of antidumping and/or countervailing duties prior to liquidation of the relevant entries during this POR. Failure to comply with this requirement could result in Commerce’s presumption that reimbursement of antidumping and/or countervailing duties has occurred and that subsequent assessment of doubled antidumping duties, and/or an increase in the amount of antidumping duties by the amount of the countervailing duties.

**Administrative Protective Order (APO)**

This notice also serves as a reminder to parties subject to an APO of their responsibility concerning the return or destruction of proprietary information disclosed under APO in accordance with 19 CFR 351.305(a)(3), which continues to govern business proprietary information in this segment of the proceeding. Timely written notification of the return or destruction of APO materials, or conversion to judicial protective order, is hereby requested. Failure to comply with the regulations and terms of an APO is a violation which is subject to sanction.

**Notification to Interested Parties**

We are issuing and publishing these final results of administrative review in accordance with sections 751(a)(1) and 777(i) of the Act, and 19 CFR 351.213(h)(2).

Dated: January 3, 2023.

**Lisa W. Wang,**

*Assistant Secretary for Enforcement and Compliance.*

**Appendix**

**List of Topics Discussed in the Issues and Decision Memorandum**

- I. Summary
- II. Background
- III. Scope of the Order

## IV. Discussion of the Issues

- Comment 1: Adjusting Mexican Surrogate Values (SV) to a Cost, Insurance, and Freight (CIF) Basis
- Comment 2: Commerce Use of Alternative Labor Data
- Comment 3: Excluding Mexican SVs for Imports Originating from Mexico
- Comment 4: Clerical Errors in the *Preliminary Results*
- A. Conversions Used for Natural Gas and Steam
- B. Calculation of Domestic Inland Freight for Reported U.S. Sales
- C. Marine Insurance Expenses Reported by Heze Huayi

## V. Recommendation

[FR Doc. 2023-00352 Filed 1-10-23; 8:45 am]

BILLING CODE 3510-DS-P

## DEPARTMENT OF COMMERCE

## National Oceanic and Atmospheric Administration

[RTID 0648-XC647]

## South Atlantic Fishery Management Council; Public Meetings

**AGENCY:** National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION:** Notice of public scoping meetings.

**SUMMARY:** The South Atlantic Fishery Management Council (Council) will hold two virtual public scoping meetings pertaining to Amendment 46 to the Fishery Management Plan (FMP) for Snapper Grouper Resources in the South Atlantic Region. This amendment would establish a permit and education requirement for the private recreational component of the snapper grouper fishery.

**DATES:** The scoping sessions will take place via webinar January 30, 2023 and February 6, 2023, beginning at 6 p.m., Eastern. See **SUPPLEMENTARY INFORMATION**.

**ADDRESSES:**

*Meeting addresses:* The scoping meetings will be held via webinar. The webinars are open to members of the public. Information, including a link to webinar registration will be posted on the Council's website at: <https://safmc.net/public-hearings-and-scoping/> as it becomes available.

*Council address:* South Atlantic Fishery Management Council, 4055 Faber Place Drive, Suite 201, N Charleston, SC 29405.

**FOR FURTHER INFORMATION CONTACT:** Kim Iverson, Public Information Officer, SAFMC; phone: (843) 571-4366 or toll

free: (866) SAFMC-10; fax: (843) 769-4520; email: [kim.iverson@safmc.net](mailto:kim.iverson@safmc.net).

**SUPPLEMENTARY INFORMATION:** Scoping documents, an online public comment form, and other materials will be posted to the Council's website at <https://safmc.net/public-hearings-and-scoping/> as they become available. Written comments should be addressed to John Carmichael, Executive Director, SAFMC, 4055 Faber Place Drive, Suite 201, N Charleston, SC 29405. Written comments must be received by February 10, 2023 by 5 p.m. in order to be included in the scoping record for the amendment. During the scoping meetings Council staff will provide an overview of actions being considered in the amendment. Staff will answer clarifying questions on the presented information and the proposed actions. Following the presentation and questions, the public will have the opportunity to provide comments on the amendment.

*Amendment 46 to the Snapper Grouper FMP*

The Council is currently considering establishing a permit requirement for the private recreational component of the snapper grouper fishery. The Council is considering permitting options that would apply on a vessel or angler basis. In conjunction with establishing a permit, the Council is considering establishing an education requirement to obtain a permit. This education requirement may cover topics such as basic regulations, species identification, species found within the snapper grouper complex, and best fishing practices.

**Special Accommodations**

These meetings are physically accessible to people with disabilities. Requests for auxiliary aids should be directed to the Council office (see **ADDRESSES**) 5 days prior to the meeting.

**Note:** The times and sequence specified in this agenda are subject to change.

*Authority:* 16 U.S.C. 1801 *et seq.*

Dated: January 6, 2023.

**Rey Israel Marquez,**

*Acting Deputy Director, Office of Sustainable Fisheries, National Marine Fisheries Service.*

[FR Doc. 2023-00392 Filed 1-10-23; 8:45 am]

BILLING CODE 3510-22-P

## DEPARTMENT OF COMMERCE

## National Oceanic and Atmospheric Administration

**Agency Information Collection Activities; Submission to the Office of Management and Budget (OMB) for Review and Approval; Comment Request; Paperwork Submissions Under the Coastal Zone Management Act Federal Consistency Requirements**

The Department of Commerce will submit the following information collection request to the Office of Management and Budget (OMB) for review and clearance in accordance with the Paperwork Reduction Act of 1995, on or after the date of publication of this notice. We invite the general public and other Federal agencies to comment on proposed, and continuing information collections, which helps us assess the impact of our information collection requirements and minimize the public's reporting burden. Public comments were previously requested via the **Federal Register** on September 15, 2022 (87 FR 56635), during a 60-day comment period. This notice allows for an additional 30 days for public comments.

*Agency:* National Oceanic and Atmospheric Administration, Commerce.

*Title:* Paperwork Submissions Under the Coastal Zone Management Act Federal Consistency Requirements.

*OMB Control Number:* 0648-0411.

*Form Number(s):* None.

*Type of Request:* Regular submission (extension of an existing information collection).

*Number of Respondents:* 2,334.

*Average Hours per Response:*

Applications/certifications and state preparation of objection or concurrence letters, 8 hours each; state requests for review of unlisted activities, 4 hours; public notices, 1 hour; interstate listing notices, 30 hours; mediation, 2 hours; appeals to the Secretary of Commerce, 210 hours.

*Total Annual Burden Hours:* 35,779.

*Needs and Uses:* This is a request to extend a currently approved information collection made by the Office for Coastal Management within the National Ocean Service of the National Oceanic and Atmospheric Administration pursuant to the requirements of Section 307 of the Coastal Zone Management Act (16 U.S.C. 1456) and its implementing regulations at 15 CFR part 930. Information collected pursuant to these requirements is used by states to determine the consistency of proposed



federal actions with the enforceable policies of State coastal management programs (CMPs), and by NOAA when deciding appeals to State objections in the exercise of the review authority that the CZMA provides.

The Coastal Zone Management Act (CZMA) creates a State-federal partnership to improve the management of the nation's coastal zone through the development of federally approved State CMPs. The CZMA provides two incentives for States to develop federally approved CMPs: (1) the National Oceanic and Atmospheric Administration (NOAA) has appropriated monies to grant to States to develop and implement State CMPs that meet statutory and regulatory criteria; and (2) the CZMA requires federal agencies, non-federal licensees, and State and local government recipients of federal assistance to conduct their activities in a manner "consistent" with the enforceable policies of NOAA-approved CMPs. The latter incentive, referred to as the "federal consistency" provision, is found at 16 U.S.C. 1456. NOAA's regulations at 15 CFR part 930 implement NOAA's responsibilities to provide procedures for the consistency provision, the procedures available for an appeal of a State's objection to a consistency certification as provided for in 16 U.S.C. 1456(c)(3)(A) and (B) and 1456(d), and changes in the appeal process created by Congressional amendments in 1990, 1996 and 2005, and found at 16 U.S.C. 1465.

Paperwork and information collection routinely occurs by State CMPs pursuant to the CZMA federal consistency review requirements. Federal agencies proposing an action that may have reasonably foreseeable effects to coastal uses or resources must provide a consistency determination to affected states. The information requirements for consistency determinations are specified at 15 CFR 930.39. Non-federal applicants for federal licenses, permits and other forms of authorization that are listed by state CMPs as subject to review, must submit a statement certifying the consistency of the proposed activity to state CMPs pursuant to 15 CFR 930.57 accompanied by the necessary data and information specified at 15 CFR 930.58. Necessary data and information includes a copy of the application for the Federal license or permit; all material relevant to the State CMP provided to the Federal agency in support of the license or permit request; a detailed description of the proposed activity, its associated facilities and coastal effects; information specifically identified in the State CMP; and an

evaluation that includes findings relating to the coastal effects of the proposal and its associated facilities to the relevant enforceable policies of the State CMP. For State and local agency applicants for federal financial assistance, the application shall be forwarded to the State CMP through the intergovernmental review process established pursuant to E.O. 12372, or submitted directly to the State CMP if the federal financial assistance is listed in the State CMP as subject to review. See 15 CFR 930.94.

Information is provided to NOAA only when there is a State objection to a proposed federal license or permit, or federal financial assistance; when informal mediation is sought by a Federal agency or State; or when an applicant for a federal license or permit, or federal financial assistance appeals to the Secretary of Commerce for an override to a State CMP objection to the issuance of the authorization, or award of assistance. Last, in 1990, Congress required State CMPs to provide for public participation in their permitting processes, consistency determinations and similar decisions. See 16 U.S.C. 1455(d)(14). How the public participation requirement is met is determined by each state with NOAA approval of the participation process.

These submissions are intended to provide a reasonable, efficient, and predictable means of complying with CZMA requirements. The information will be used by coastal states with federally-approved Coastal Zone Management Programs to determine if Federal agency activities, Federal license or permit activities, and Federal assistance activities that affect a state's coastal zone are consistent with the state's coastal management program.

Information developed for and during state reviews will also be collected and considered by NOAA for appeals filed by non-federal applicants seeking an override of state CZMA objections to federal license or permit activities or Federal assistance activities.

There have been no changes to the information collection requirements, their applicability or the methods of collection since the previous Paperwork Reduction Act extension.

*Affected Public:* Federal and state agencies, federal license and permit applicants, lessees under the Outer Continental Shelf Lands Act, applicants for federal financial assistance to state and local governments.

*Frequency:* With the state review process under the CZMA being part of the federal decision-making process for proposed federal actions, the reviews

have the same frequency as other regulatory compliance reviews.

*Respondent's Obligation:* Required to obtain or retain services or benefits.

*Legal Authority:* 16 U.S.C. 1456, 15 CFR part 930.

This information collection request may be viewed at [www.reginfo.gov](http://www.reginfo.gov). Follow the instructions to view the Department of Commerce collections currently under review by OMB.

Written comments and recommendations for the proposed information collection should be submitted within 30 days of the publication of this notice on the following website [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain). Find this particular information collection by selecting "Currently under 30-day Review—Open for Public Comments" or by using the search function and entering either the title of the collection or the OMB Control Number 0648-0411.

**Sheleen Dumas,**

*Department PRA Clearance Officer, Office of the Chief Information Officer, Commerce Department.*

[FR Doc. 2023-00400 Filed 1-10-23; 8:45 am]

**BILLING CODE 3510-08-P**

## DEPARTMENT OF COMMERCE

### National Oceanic and Atmospheric Administration

#### Agency Information Collection Activities; Submission to the Office of Management and Budget (OMB) for Review and Approval; Comment Request; Pacific Coast Groundfish Fishery Rationalization Social Study

The Department of Commerce will submit the following information collection request to the Office of Management and Budget (OMB) for review and clearance in accordance with the Paperwork Reduction Act of 1995, on or after the date of publication of this notice. We invite the general public and other Federal agencies to comment on proposed, and continuing information collections, which helps us assess the impact of our information collection requirements and minimize the public's reporting burden. Public comments were previously requested via the **Federal Register** on August 4, 2022 during a 60-day comment period. This notice allows for an additional 30 days for public comments.

*Agency:* National Oceanic and Atmospheric Administration (NOAA), Commerce.

*Title:* The Pacific Coast Groundfish Fishery Rationalization Social Study.  
*OMB Control Number:* 0648-0606.

*Form Number(s)*: None.

*Type of Request*: Regular submission [Extension of a current information collection].

*Number of Respondents*: 142.

*Average Hours per Response*: Survey/Interview, 1 hour; Interview Only, 30 minutes; Meeting Only, 1 hour.

*Total Annual Burden Hours*: 134.

*Needs and Uses*: The Human Dimensions Team of the Conservation Biology Division at the Northwest Fisheries Science Center (NWFSC), Seattle, WA is requesting a renewal of its currently approved voluntary information collection 0648–0606. The data collected under this authorization supports the National Environmental Policy Act (NEPA), the current Magnuson Stevens Fishery Conservation Act (MSA), contributes information to the Endangered Species Act requirements, and the Regulatory Flexibility Act. Information from this data collection has supported National Marine Fisheries Service (NMFS) and Pacific Fisheries Management Council (PFMC) fisheries management actions. Data from this study has been included in broad resources to include the MSA mandated 5-year review of the West Coast Groundfish Trawl Catch Shares Program, in peer-reviewed documents, websites, and white papers. The collection of this data not only informs legal requirements for existing management actions, but also provides information for future management actions requiring equivalent information.

Literature indicates fisheries rationalization programs have an impact on those individuals participating in the affected fishery. The PFMC implemented a rationalization program for the West Coast Groundfish limited entry trawl fishery in January 2011. This research aims to continue to study the individuals in the affected fishery over the long term. It aims to collect data on a five-year cycle, post initial data collection efforts. Prior data collection was related to program design elements. A baseline data collection occurred in 2010, followed by a second post-implementation collection in 2012, and a post quota-share trading collection in 2015/2016. The data collected has contributed to the five-year review of the program and highlighted several areas for continued research. Efforts have also identified the need for long term data collection as species recover and external factors affect fishermen in this fishery. Such challenges include underutilization, high costs of participation, difficulty finding qualified crew, Covid challenges and other challenges. The study has been

able to highlight several issues such as ‘graying of the fleet’ in smaller communities, changing women’s roles in commercial fishing, and fishermen’s adaptations under the new regulations. Continued research is needed to understand continued and long term social impacts. Combined with the ongoing mandatory Economic Data Collection (EDC) and biological data collection, this research provides the PFMC extensive information on concerns and impacts to fishing communities.

This data collection not only supports the requirements of NEPA and NSA, but supports the NWFSC’s Vivid Description of the Future (VDOF) priorities to include Healthy Coastal Communities. This research project also supports NOAA’s 2022–2026 Strategic Plan contributing information to Strategic Objective 2.2: Support Underserved and Vulnerable Communities, and Strategic Objective 3.3: Improve Resilience of Coastal Communities and Economies.

This study collects a broad swath of information from community members through a questionnaire and semi-structured interviews. Questionnaire sections include Demographic Information, Individual Participation Information, Connections, Catch Shares Perspectives, Quota Owners & Vessel Account Manager Section, Fishermen Section, and a Processors Section. The questionnaire is primarily administered in person in communities where respondents live. Study participants include anyone who has a connection to the West Coast Groundfish Trawl Fishery. This includes fishermen, fishermen’s wives, processing personnel, suppliers (ice, net, drydock, etc.), and others linked to the fishery.

As previously indicated information from this study has broad applications. To date, this project has informed concerns of graying of the fleet—age disparities in some fisheries, has highlighted changing women’s roles, has supported management to open Yelloweye fisheries, has reported on crew disparities, aims to understand processing challenges, and is contributing to Ecosystem Science Studies. Ongoing studies include infrastructure changes, vessel typology studies, and is contributing to fishing diversity knowledge as well as climate studies. Continued research will inform resilience and adaptation studies, will further inform infrastructure studies, and contribute to and further support efforts to understand underserved communities and build strong and healthy coastal communities.

At this time there are no changes to the questionnaire, no changes to the frequency of the data collection, and no changes to the target population. It is critical to maintain consistent study parameters for the longitudinal and time series study of this fishery to result in accurate and consistent data and results.

*Affected Public*: Fishermen, Fishing Community Members.

*Frequency*: Once every 5 years.

*Respondent’s Obligation*: Voluntary.

*Legal Authority*: MSA, NEPA.

This information collection request may be viewed at [www.reginfo.gov](http://www.reginfo.gov). Follow the instructions to view the Department of Commerce collections currently under review by OMB.

Written comments and recommendations for the proposed information collection should be submitted within 30 days of the publication of this notice on the following website [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain). Find this particular information collection by selecting “Currently under 30-day Review—Open for Public Comments” or by using the search function and entering either the title of the collection or the OMB Control Number 0648–0606.

**Sheleen Dumas,**

*Department PRA Clearance Officer, Office of the Chief Information Officer, Commerce Department.*

[FR Doc. 2023–00402 Filed 1–10–23; 8:45 am]

**BILLING CODE 3510–22–P**

## DEPARTMENT OF COMMERCE

### National Oceanic and Atmospheric Administration

[RTID 0648–XC658]

#### Mid-Atlantic Fishery Management Council (MAFMC); Public Meeting

**AGENCY**: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION**: Notice; public meeting.

**SUMMARY**: The Mid-Atlantic Fishery Management Council’s Surfclam and Ocean Quahog Advisory Panel and Species Separation Requirements Amendment—Fishery Management Action Team will hold a public webinar meeting. See **SUPPLEMENTARY INFORMATION** for agenda details.

**DATES**: The meeting will be held on Thursday, January 26, 2023, from 1 p.m. until 3:30 p.m.

**ADDRESSES**: The meeting will be held via webinar. Connection information will be posted to the calendar prior to the meeting at [www.mafmc.org](http://www.mafmc.org).

*Council address:* Mid-Atlantic Fishery Management Council, 800 N State Street, Suite 201, Dover, DE 19901; telephone: (302) 674-2331; [www.mafmc.org](http://www.mafmc.org).

**FOR FURTHER INFORMATION CONTACT:**

Christopher M. Moore, Ph.D., Executive Director, Mid-Atlantic Fishery Management Council, telephone: (302) 526-5255.

**SUPPLEMENTARY INFORMATION:** The purpose of this meeting is for the Advisory Panel to provide input on the Fishery Management Action Team's draft action plan for work on the Species Separation Requirements Amendment in 2023. In addition, the Fishery Management Action Team will gather input from the Advisory Panel on additional types of solutions/ approaches that could be considered for the amendment.

**Special Accommodations**

The meeting is physically accessible to people with disabilities. Requests for sign language interpretation or other auxiliary aid should be directed to Shelley Spedden, (302) 526-5251, at least 5 days prior to the meeting date.

*Authority:* 16 U.S.C. 1801 *et seq.*

Dated: January 6, 2023.

**Rey Israel Marquez,**

*Acting Deputy Director, Office of Sustainable Fisheries, National Marine Fisheries Service.*

[FR Doc. 2023-00393 Filed 1-10-23; 8:45 am]

**BILLING CODE 3510-22-P**

**BUREAU OF CONSUMER FINANCIAL PROTECTION**

[Docket No. CFPB-2023-0004]

**Agency Information Collection Activities: Comment Request**

**AGENCY:** Bureau of Consumer Financial Protection.

**ACTION:** Notice and request for comment.

**SUMMARY:** In accordance with the Paperwork Reduction Act of 1995 (PRA), the Consumer Financial Protection Bureau (Bureau or CFPB) is requesting to extend the Office of Management and Budget's (OMB's) approval for an existing information collection titled "Generic Information Collection Plan for Surveys Using the Consumer Credit Panel" approved under OMB Control Number 3170-0066.

**DATES:** Written comments are encouraged and must be received on or before March 13, 2023 to be assured of consideration.

**ADDRESSES:** You may submit comments, identified by the title of the information

collection, OMB Control Number (see below), and docket number (see above), by any of the following methods:

- *Federal eRulemaking Portal:*

<https://www.regulations.gov>. Follow the instructions for submitting comments.

- *Email:* [PRA\\_Comments@cfpb.gov](mailto:PRA_Comments@cfpb.gov).

Include Docket No. CFPB-2023-0004 in the subject line of the email.

- *Mail/Hand Delivery/Courier:*

Comment Intake, Consumer Financial Protection Bureau (Attention: PRA Office), 1700 G Street NW, Washington, DC 20552. Because paper mail in the Washington, DC area and at the Bureau is subject to delay, commenters are encouraged to submit comments electronically.

Please note that comments submitted after the comment period will not be accepted. In general, all comments received will become public records, including any personal information provided. Sensitive personal information, such as account numbers or Social Security numbers, should not be included.

**FOR FURTHER INFORMATION CONTACT:**

Requests for additional information should be directed to Anthony May, PRA Officer, at (202) 435-7278, or email: [CFPB\\_PRA@cfpb.gov](mailto:CFPB_PRA@cfpb.gov). If you require this document in an alternative electronic format, please contact [CFPB\\_Accessibility@cfpb.gov](mailto:CFPB_Accessibility@cfpb.gov). Please do not submit comments to these email boxes.

**SUPPLEMENTARY INFORMATION:**

*Title of Collection:* Generic Information Collection Plan for Surveys Using the Consumer Credit Panel.

*OMB Control Number:* 3170-0066.

*Type of Review:* Extension of a currently approved collection.

*Affected Public:* Individuals and households.

*Estimated Number of Respondents:* 18,000.

*Estimated Total Annual Burden Hours:* 9,000.

*Abstract:* The Dodd-Frank Wall Street Reform and Consumer Protection Act charges the Bureau with researching, analyzing, and reporting on topics relating to the Bureau's mission including consumer behavior, consumer awareness, and developments in markets for consumer financial products and services. To improve its understanding of how consumers engage with financial markets, the Bureau has used the Consumer Credit Panel (CCP), a proprietary sample dataset from one of the national credit reporting agencies, as a frame to survey people about their experiences in consumer credit markets. The Bureau seeks to obtain approval for a generic information collection plan for these

types of surveys. Surveys conducted under this generic information collection plan will support the Bureau's mission to conduct research in areas related to consumer finance including research to monitor developments in consumers' financial situations, related changes in their use of financial products, and the impacts that these decisions have on their balance sheets. All research under this plan will be for general, formative, and informational research on consumer financial markets and consumers' use of financial products and will not directly provide the basis for specific policymaking at the Bureau.

*Request for Comments:* Comments are invited on: (a) Whether the collection of information is necessary for the proper performance of the functions of the Bureau, including whether the information will have practical utility; (b) The accuracy of the Bureau's estimate of the burden of the collection of information, including the validity of the methods and the assumptions used; (c) Ways to enhance the quality, utility, and clarity of the information to be collected; and (d) Ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology. Comments submitted in response to this notice will be summarized and/or included in the request for OMB's approval. All comments will become a matter of public record.

**Anthony May,**

*Paperwork Reduction Act Officer, Consumer Financial Protection Bureau.*

[FR Doc. 2023-00314 Filed 1-10-23; 8:45 am]

**BILLING CODE 4810-AM-P**

**BUREAU OF CONSUMER FINANCIAL PROTECTION**

[Docket No. CFPB-2023-0005]

**Agency Information Collection Activities: Comment Request**

**AGENCY:** Bureau of Consumer Financial Protection.

**ACTION:** Notice and request for comment.

**SUMMARY:** In accordance with the Paperwork Reduction Act of 1995 (PRA), the Consumer Financial Protection Bureau (Bureau or CFPB) is requesting the extension of the Office of Management and Budget's (OMB's) approval for an existing information collection titled "Generic Information Collection Plan for Information on Compliance Costs and Other Effects of

Regulations” approved under OMB Control Number 3170–0032.

**DATES:** Written comments are encouraged and must be received on or before February 10, 2023 to be assured of consideration.

**ADDRESSES:** Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain). Find this particular information collection by selecting “Currently under 30-day Review—Open for Public Comments” or by using the search function. In general, all comments received will become public records, including any personal information provided. Sensitive personal information, such as account numbers or Social Security numbers, should not be included.

**FOR FURTHER INFORMATION CONTACT:** Requests for additional information should be directed to Anthony May, Paperwork Reduction Act Officer, at (202) 435–7278, or email: [CFPB\\_PRA@cfpb.gov](mailto:CFPB_PRA@cfpb.gov). If you require this document in an alternative electronic format, please contact [CFPB\\_Accessibility@cfpb.gov](mailto:CFPB_Accessibility@cfpb.gov). Please do not submit comments to these email boxes.

**SUPPLEMENTARY INFORMATION:**

*Title of Collection:* Generic Information Collection Plan for Information on Compliance Costs and Other Effects of Regulations.

*OMB Control Number:* 3170–0032.

*Type of Review:* Extension without change of a currently approved collection.

*Affected Public:* Private section: businesses and other for-profit entities.

*Estimated Number of Respondents:* 75,000.

*Estimated Total Annual Burden Hours:* 77,994.

*Abstract:* The Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) requires or authorizes the Bureau to implement new consumer protections in the offering or provision of certain consumer financial products and services. This information collection is required in order to effectively incorporate information from providers concerning compliance costs and other effects of regulations as part of the information base for potential rulemakings and prospective and retrospective regulatory burden analyses.

*Request for Comments:* The Bureau published a 60-day **Federal Register** notice on October 26, 2022 (87 FR 64755) under Docket Number: CFPB–2022–0071. The Bureau is publishing this notice and soliciting comments on:

(a) Whether the collection of information is necessary for the proper performance of the functions of the Bureau, including whether the information will have practical utility; (b) The accuracy of the Bureau’s estimate of the burden of the collection of information, including the validity of the methods and the assumptions used; (c) Ways to enhance the quality, utility, and clarity of the information to be collected; and (d) Ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology. Comments submitted in response to this notice will be reviewed by OMB as part of its review of this request. All comments will become a matter of public record.

**Anthony May,**

*Paperwork Reduction Act Officer, Consumer Financial Protection Bureau.*

[FR Doc. 2023–00312 Filed 1–10–23; 8:45 am]

**BILLING CODE 4810–AM–P**

## BUREAU OF CONSUMER FINANCIAL PROTECTION

[Docket No. CFPB–2023–0006]

### Agency Information Collection Activities: Comment Request

**AGENCY:** Bureau of Consumer Financial Protection.

**ACTION:** Notice and request for comment.

**SUMMARY:** In accordance with the Paperwork Reduction Act of 1995 (PRA), the Consumer Financial Protection Bureau (Bureau or CFPB) is requesting the extension of the Office of Management and Budget’s (OMB’s) approval for an existing information collection titled “Generic Information Collection Plan for Studies of Consumers Using Controlled Trials in Field and Economic Laboratory Settings” approved under OMB Control Number 3170–0048.

**DATES:** Written comments are encouraged and must be received on or before February 10, 2023 to be assured of consideration.

**ADDRESSES:** Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain). Find this particular information collection by selecting “Currently under 30-day Review—Open for Public Comments” or by using the search function. In general, all comments received will become public records, including any personal

information provided. Sensitive personal information, such as account numbers or Social Security numbers, should not be included.

**FOR FURTHER INFORMATION CONTACT:** Requests for additional information should be directed to Anthony May, Paperwork Reduction Act Officer, at (202) 435–7278, or email: [CFPB\\_PRA@cfpb.gov](mailto:CFPB_PRA@cfpb.gov). If you require this document in an alternative electronic format, please contact [CFPB\\_Accessibility@cfpb.gov](mailto:CFPB_Accessibility@cfpb.gov). Please do not submit comments to these email boxes.

**SUPPLEMENTARY INFORMATION:**

*Title of Collection:* Generic Information Collection Plan for Studies of Consumers Using Controlled Trials in Field and Economic Laboratory Settings.

*OMB Control Number:* 3170–0048.

*Type of Review:* Extension of a currently approved collection.

*Affected Public:* Individuals and households.

*Estimated Number of Respondents:* 44,150.

*Estimated Total Annual Burden Hours:* 33,100.

*Abstract:* The Dodd-Frank Wall Street Reform and Consumer Protection Act tasks the Bureau with researching, analyzing, and reporting on topics relating to the Bureau’s mission including developments in markets for consumer financial products and services, consumer awareness, and consumer behavior. Under this generic information collection plan, the Bureau collects data through controlled trials in field and economic laboratory settings. This research is used for developmental and informative purposes to increase the Bureau’s understanding of consumer credit markets and household financial decision-making. Basic research projects will be submitted under this clearance.

*Request for Comments:* The Bureau published a 60-day **Federal Register** notice on September 19, 2022 (87 FR 57182) under Docket Number: CFPB–2022–0062. The Bureau is publishing this notice and soliciting comments on: (a) Whether the collection of information is necessary for the proper performance of the functions of the Bureau, including whether the information will have practical utility; (b) The accuracy of the Bureau’s estimate of the burden of the collection of information, including the validity of the methods and the assumptions used; (c) Ways to enhance the quality, utility, and clarity of the information to be collected; and (d) Ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information

technology. Comments submitted in response to this notice will be reviewed by OMB as part of its review of this request. All comments will become a matter of public record.

**Anthony May,**

*Paperwork Reduction Act Officer, Consumer Financial Protection Bureau.*

[FR Doc. 2023–00313 Filed 1–10–23; 8:45 am]

BILLING CODE 4810–AM–P

**BUREAU OF CONSUMER FINANCIAL PROTECTION**

[Docket No. CFPB–2023–0003]

**Agency Information Collection Activities: Comment Request**

**AGENCY:** Bureau of Consumer Financial Protection.

**ACTION:** Notice and request for comment.

**SUMMARY:** In accordance with the Paperwork Reduction Act of 1995 (PRA), the Consumer Financial Protection Bureau (Bureau or CFPB) is requesting to extend the Office of Management and Budget’s (OMB’s) approval for an existing information collection titled “Truth in Lending Act (Regulation Z)” approved under OMB Control Number 3170–0015.

**DATES:** Written comments are encouraged and must be received on or before March 13, 2023 to be assured of consideration.

**ADDRESSES:** You may submit comments, identified by the title of the information collection, OMB Control Number (see below), and docket number (see above), by any of the following methods:

- *Federal eRulemaking Portal:*

<https://www.regulations.gov>. Follow the instructions for submitting comments.

- *Email:* [PRA\\_Comments@cfpb.gov](mailto:PRA_Comments@cfpb.gov).

Include Docket No. CFPB–2023–0003 in the subject line of the email.

- *Mail/Hand Delivery/Courier:*

Comment Intake, Consumer Financial Protection Bureau (Attention: PRA Office), 1700 G Street NW, Washington, DC 20552. Because paper mail in the Washington, DC area and at the Bureau is subject to delay, commenters are encouraged to submit comments electronically.

Please note that comments submitted after the comment period will not be accepted. In general, all comments received will become public records, including any personal information provided. Sensitive personal information, such as account numbers or Social Security numbers, should not be included.

**FOR FURTHER INFORMATION CONTACT:** Requests for additional information

should be directed to Anthony May, PRA Officer, at (202) 435–7278, or email: [CFPB\\_PRA@cfpb.gov](mailto:CFPB_PRA@cfpb.gov). If you require this document in an alternative electronic format, please contact [CFPB\\_Accessibility@cfpb.gov](mailto:CFPB_Accessibility@cfpb.gov). Please do not submit comments to these email boxes.

**SUPPLEMENTARY INFORMATION:**

*Title of Collection:* Truth in Lending Act (Regulation Z).

*OMB Control Number:* 3170–0015.

*Type of Review:* Extension without change of a currently approved collection.

*Affected Public:* Private sector: businesses or other for-profits; not-for-profits institutions.

*Estimated Number of Respondents:* 17,215.

*Estimated Total Annual Burden Hours:* 1,345,102.

*Abstract:* The Truth in Lending Act (TILA), 15 U.S.C. 1601 *et seq.*, was enacted to foster comparison credit shopping and informed credit decision making by requiring accurate disclosure of the costs and terms of credit to consumers and to protect consumers against inaccurate and unfair credit billing practices. Creditors are subject to disclosure and other requirements that apply to open-end credit (*e.g.*, revolving credit or credit lines) and closed-end credit (*e.g.*, installment financing). TILA imposes disclosure requirements on all types of creditors in connection with consumer credit, including mortgage companies, finance companies, retailers, and credit card issuers, to ensure that consumers are fully apprised of the terms of financing prior to consummation of the transaction and, as applicable, during the loan term.

*Request for Comments:* Comments are invited on: (a) Whether the collection of information is necessary for the proper performance of the functions of the Bureau, including whether the information will have practical utility; (b) The accuracy of the Bureau’s estimate of the burden of the collection of information, including the validity of the methods and the assumptions used; (c) Ways to enhance the quality, utility, and clarity of the information to be collected; and (d) Ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology. Comments submitted in response to this notice will be summarized and/or included in the request for OMB’s approval. All

comments will become a matter of public record.

**Anthony May,**

*Paperwork Reduction Act Officer, Consumer Financial Protection Bureau.*

[FR Doc. 2023–00310 Filed 1–10–23; 8:45 am]

BILLING CODE 4810–AM–P

**BUREAU OF CONSUMER FINANCIAL PROTECTION**

[Docket No. CFPB–2023–0007]

**Agency Information Collection Activities: Comment Request**

**AGENCY:** Bureau of Consumer Financial Protection.

**ACTION:** Notice and request for comment.

**SUMMARY:** In accordance with the Paperwork Reduction Act of 1995 (PRA), the Consumer Financial Protection Bureau (Bureau or CFPB) is requesting the extension of the Office of Management and Budget’s (OMB’s) approval for an existing information collection titled “Application for the Bureau’s Advisory Committees” approved under OMB Number 3170–0037.

**DATES:** Written comments are encouraged and must be received on or before February 10, 2023 to be assured of consideration.

**ADDRESSES:** Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain). Find this particular information collection by selecting “Currently under 30-day Review—Open for Public Comments” or by using the search function. In general, all comments received will become public records, including any personal information provided. Sensitive personal information, such as account numbers or Social Security numbers, should not be included.

**FOR FURTHER INFORMATION CONTACT:** Requests for additional information should be directed to Anthony May, Paperwork Reduction Act Officer, at (202) 435–7278, or email: [CFPB\\_PRA@cfpb.gov](mailto:CFPB_PRA@cfpb.gov). If you require this document in an alternative electronic format, please contact [CFPB\\_Accessibility@cfpb.gov](mailto:CFPB_Accessibility@cfpb.gov). Please do not submit comments to these email boxes.

**SUPPLEMENTARY INFORMATION:**

*Title of Collection:* Application for the Bureau’s Advisory Committees.

*OMB Control Number:* 3170–0037.

*Type of Review:* Extension without change of a currently approved collection.

*Affected Public:* Individuals or households.

*Estimated Number of Respondents:* 425.

*Estimated Total Annual Burden Hours:* 491.

*Abstract:* The Director of the Bureau may invite individuals with special expertise to serve on the Bureau's advisory committees. The selection-related material will allow the Bureau to obtain information on the qualifications of individuals nominated to an advisory committee and will aid the Bureau in selecting members for service on an advisory committee. The selection-related information will also aid the Bureau in determining the appropriateness of participation in particular matters. The information collected from applicants will aid the Bureau in the exercise of its functions. The feedback collected will allow the Bureau to evaluate and improve its advisory committee program. The Bureau will use the information collected for vetting candidates, issuing travel orders, or providing reimbursement for travel expenses (as applicable).

*Request for Comments:* The Bureau published a 60-day **Federal Register** notice on October 26, 2022 (87 FR 64775) under Docket Number: CFPB–2022–0072. The Bureau is publishing this notice and soliciting comments on: (a) Whether the collection of information is necessary for the proper performance of the functions of the Bureau, including whether the information will have practical utility; (b) The accuracy of the Bureau's estimate of the burden of the collection of information, including the validity of the methods and the assumptions used; (c) Ways to enhance the quality, utility, and clarity of the information to be collected; and (d) Ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology. Comments submitted in response to this notice will be reviewed by OMB as part of its review of this request. All comments will become a matter of public record.

**Anthony May,**

*Paperwork Reduction Act Officer, Consumer Financial Protection Bureau.*

[FR Doc. 2023–00317 Filed 1–10–23; 8:45 am]

**BILLING CODE 4810-AM-P**

## DEPARTMENT OF EDUCATION

[Docket ID ED–2022–OUS–0140]

### Request for Information Regarding Public Transparency for Low-Financial-Value Postsecondary Programs

**AGENCY:** Office of the Under Secretary, U.S. Department of Education.

**ACTION:** Request for information.

**SUMMARY:** The U.S. Department of Education (Department) is requesting information in the form of written comments that may include information, research, and suggestions regarding how best to identify low-value postsecondary programs. The Office of the Under Secretary solicits these comments to identify the best ways to calculate the metrics that may be used to identify low-financial-value programs and inform technical considerations.

**DATES:** We must receive your comments on or before February 10, 2023.

**ADDRESSES:** Comments must be submitted via the Federal eRulemaking Portal at [regulations.gov](https://www.regulations.gov). However, if you require an accommodation or cannot otherwise submit your comments via [regulations.gov](https://www.regulations.gov), please contact the program contact person listed under **FOR FURTHER INFORMATION CONTACT**. The Department will not accept comments by fax or by email, or comments submitted after the comment period closes. To ensure that the Department does not receive duplicate copies, please submit your comments only once. Additionally, please include the Docket ID at the top of your comments.

The Department strongly encourages you to submit any comments or attachments in Microsoft Word format. If you must submit a comment in Adobe Portable Document Format (PDF), the Department strongly encourages you to convert the PDF to “print-to-PDF” format, or to use some other commonly used searchable text format. Please do not submit the PDF in a scanned format. Using a print-to-PDF format allows the Department to electronically search and copy certain portions of your submissions to assist in the rulemaking process.

*Federal eRulemaking Portal:* Go to [www.regulations.gov](https://www.regulations.gov) to submit your comments electronically. Information on using [Regulations.gov](https://www.regulations.gov), including instructions for accessing agency documents, submitting comments, and viewing the docket, is available on the site under “FAQ.”

*Privacy Note:* The Department's policy is to make all comments received

from members of the public available for public viewing in their entirety on the Federal eRulemaking Portal at [www.regulations.gov](https://www.regulations.gov). Therefore, commenters should be careful to include in their comments only information that they wish to make publicly available.

**FOR FURTHER INFORMATION CONTACT:** Mr. Jean-Didier Gaina, U.S. Department of Education, 400 Maryland Ave. SW, Room 2C172, Washington, DC 20202. Telephone: (202) 987–1333. Email: [jean-didier.gaina@ed.gov](mailto:jean-didier.gaina@ed.gov).

If you are deaf, hard of hearing, or have a speech disability and wish to access telecommunications relay services, please dial 7–1–1.

#### SUPPLEMENTARY INFORMATION:

##### I. Background

For most students, attending a postsecondary education program is a path to upward economic mobility and financial security. On average, completing a postsecondary education credential substantially increases lifetime earnings and reduces the risk of unemployment. In many cases, a college credential leads to a career, such as teaching, that benefits society as a whole.

In an environment where the rise in tuition levels has outpaced the availability of scholarships, student loans have been an integral tool for delivering these benefits. Millions of students likely would not have been able to cover the upfront price of postsecondary education without Federal student loans.

However, there are many low-financial-value postsecondary programs—those for which total costs exceed the financial benefits provided to students. Some higher education programs promote goals other than financial returns for students. However, a misalignment of prices charged to financial benefits received may cause particularly acute harm for student loan borrowers who may struggle to repay their debts after discovering too late that their postsecondary programs did not adequately prepare them for the workforce. Taxpayers also shoulder the costs when a substantial number and share of borrowers are unable to successfully repay their loans. The number of borrowers facing challenges related to the repayment of their student loans is significant. Prior to the pause on repayment, interest, and debt collection as part of the response to the COVID–19 pandemic, more than 1 million borrowers defaulted on their student loans each year, and millions more borrowers were behind on their

student loan payments. Low-income students, Black students, and other students of color are more likely to borrow, borrow more, and are more likely to struggle to repay their loans.

Income-driven repayment (IDR) plans have been an important option in recent years to help borrowers manage their monthly payment obligations. These repayment plans cap borrowers' payments at a set share of their income and allow lower-income borrowers a \$0 payment. These plans forgive remaining balances after the equivalent of 20 or 25 years of payments.

Although the affordable monthly payments on IDR plans provide a critical safety net to borrowers, they do not address the underlying problems stemming from the high prices charged by some institutions and low graduation rates across postsecondary education over the last few decades. This includes the presence of too many postsecondary programs that saddle students with levels of debt far out of proportion to the income they earn after leaving their program. Data from the College Scorecard show these problems are especially concentrated among undergraduate certificate programs and graduate programs.

Programs that result in students taking on excessive amounts of debt can make it challenging for students to reach significant life milestones like purchasing a home, starting a family, or saving enough for retirement, ultimately undermining their ability to climb the economic mobility ladder. Especially for borrowers who attended graduate programs, debt-to-income ratios often rise well above sustainable levels. IDR plans also cannot fully protect borrowers from the consequences of low financial-value programs. For instance, IDR plans cannot give students back the time they invested in such programs. For many programs, the cost of students' time may be at least as significant as direct program costs such as tuition, fees, and supplies. Loans will also still show up on borrowers' credit reports, including any periods of delinquency or default prior to enrollment in IDR.

Moreover, IDR plans can transfer some of the cost of financing a low-financial-value postsecondary program to taxpayers through debt forgiveness. The goal of the IDR program is to reduce the burden of loans for low- and middle-income borrowers, not to subsidize programs that fail to help many of their students graduate and achieve their goals.

The Administration is taking significant steps to hold institutions of higher education accountable. This fall, the Department finalized regulations

that close long-standing loopholes in requirements for private for-profit institutions to derive at least 10 percent of their revenue from private sources. We subsequently issued final rules that provide a path to discharge student loans if institutions misled or otherwise took advantage of students and for the Department to recoup the costs of these discharges. The Department has also reestablished the Office of Enforcement within Federal Student Aid to conduct in-depth investigations into problematic institutions. In the future, we intend to prepare and issue regulations to hold career training programs accountable for providing sufficient value for students, among other topics.

This is a request for information (RFI) only. This RFI is not a request for proposals (RFP) or a promise to issue an RFP or a notice inviting applications. This RFI does not commit the Department to contract for any supply or service whatsoever. Further, we are not seeking proposals and will not accept unsolicited proposals. The Department will not pay for any information or administrative costs that you may incur in responding to this RFI. The documents and information submitted in response to this RFI become the property of the U.S. Government and will not be returned.

## **II. Increasing Transparency Around Low-Financial-Value Programs**

The Biden-Harris Administration is committed to improving accountability for institutions of higher education. One component of that work is to increase transparency and public accountability by drawing attention to the postsecondary programs that are most likely to leave students with unaffordable loans and provide the lowest financial returns for students and taxpayers. The Department is referring to these as "low-financial-value" programs for the purposes of this RFI, while acknowledging some of these programs may provide non-economic value. The Department believes annually publishing a list of the programs with the lowest financial value will draw public attention to these programs. The Department also is committed to sending letters to institutions with the most concerning programs to ask for their plans to improve the value of their programs. These steps should reduce the extent to which students and taxpayers are exposed to the negative consequences resulting from low-financial-value programs.

## **III. Solicitation of Comments: Constructing a List of Low-Financial-Value Postsecondary Programs**

To help inform the construction of the list of low-financial-value programs, the Department is seeking input from the public on which measures and metrics to use to determine "financial-value", what data could be leveraged to assist this effort, and other technical considerations. This effort is separate from any ongoing regulatory work. The deadline for these submissions is February 10, 2023.

The Department encourages comments from researchers, academics, policy experts, and other individuals familiar with postsecondary education data; organizations that work directly with students to counsel them in selecting institutions of higher education or postsecondary programs; institutions of higher education; borrowers who have been through the process of selecting a postsecondary education program or institution; and other members of the public.

The Department seeks responses to the specific questions below, as well as the general concepts and topics identified as they relate to the construction of the list of low-value programs. When responding to this RFI, please address one or more of the following questions:

### *Measures and Metrics*

1. What program-level data and metrics would be most helpful to students to understand the financial (and other) consequences of attending a program?
2. What program-level data and metrics would be most helpful to understand whether public investments in the program are worthwhile? What data might be collected uniformly across all students who attend a program that would help assess the nonfinancial value created by the program?
3. In addition to the measures or metrics used to determine whether a program is placed on the low-financial-value program list, what other measures and metrics should be disclosed to improve the information provided by the list?

### *List Structure*

4. The Department intends to use the 6-digit Classification of Instructional Program (CIP) code and the type of credential awarded to define programs at an institution. Should the Department publish information using the 4-digit CIP codes or some other type of aggregation in cases where we would not otherwise be able to report program data?

5. Should the Department produce only a single low-financial-value program list, separate lists by credential level, or use some other breakdown, such as one for graduate and another for undergraduate programs?

#### Data Elements

6. What additional data could the Department collect that would substantially improve our ability to provide accurate data for the public to help understand the value being created by the program? Please comment on the value of the new metrics relative to the burden institutions would face in reporting information to the Department.

#### Public Dissemination

7. What are the best ways to make sure that institutions and students are aware of this information?

**Accessible Format:** On request to the program contact person listed under **FOR FURTHER INFORMATION CONTACT**, individuals with disabilities can obtain this document in an accessible format. The Department will provide the requestor with an accessible format that may include Rich Text Format (RTF) or text format (txt), a thumb drive, an MP3 file, braille, large print, audiotape, or compact disc, or other accessible format.

**Electronic Access to This Document:** The official version of this document is the document published in the **Federal Register**. You may access the official edition of the **Federal Register** and the Code of Federal Regulations at [www.govinfo.gov](http://www.govinfo.gov). At this site you can view this document, as well as all other documents of this Department published in the **Federal Register**, in text or Portable Document Format (PDF). To use PDF you must have Adobe Acrobat Reader, which is available free at the site.

You may also access documents of the Department published in the **Federal Register** by using the article search feature at [www.federalregister.gov](http://www.federalregister.gov). Specifically, through the advanced search feature at this site, you can limit your search to documents published by the Department.

**James Kvaal,**

*Under Secretary, Office of the Under Secretary.*

[FR Doc. 2022-28606 Filed 1-10-23; 8:45 am]

**BILLING CODE 4000-01-P**

## DEPARTMENT OF EDUCATION

### President's Board of Advisors on Historically Black Colleges and Universities

**AGENCY:** U.S. Department of Education, President's Board of Advisors on Historically Black Colleges and Universities, Office of Undersecretary, U.S. Department of Education.

**ACTION:** Announcement of an open meeting.

**SUMMARY:** This notice sets forth the agenda for the January 27, 2023, virtual meeting of the President's Board of Advisors on Historically Black Colleges and Universities (Board) and provides information to members of the public about how to attend the meeting, request to make oral comments at the meeting, and submit written comments pertaining to the work of the Board. Notice of the meeting is required by § 10(a)(2) of the Federal Advisory Committee Act (FACA), (Pub. L. 92-463, as amended, 5 U.S.C. App. 2), and is intended to notify the public of its opportunity to attend.

**DATES:** The Board meeting will be held virtually on January 27, 2023 from 11:30 a.m. to 4 p.m. EDT via the following link: <https://ems8.intellor.com/login/846162>.

**FOR FURTHER INFORMATION CONTACT:** Sedika Franklin, Associate Director/ Designated Federal Official, U.S. Department of Education, White House Initiative on Historically Black Colleges and Universities, 400 Maryland Avenue SW, Washington, DC 20204; telephone: (202) 453-5634 or (202) 453-5630, or email [sedika.franklin@ed.gov](mailto:sedika.franklin@ed.gov).

#### SUPPLEMENTARY INFORMATION:

*The Board's Statutory Authority and Function:* The Board is established by 20 U.S.C. 1063e (the HBCUs Partners Act) and Executive Order 14041 (September 3, 2021) and is continued by Executive Order 14048 ((September 30, 2021). The Board is also governed by the provisions of FACA, which sets forth standards for the formation and use of advisory committees. The purpose of the Board is to advise the President, through the White House Initiative on Historically Black Colleges and Universities (Initiative), on all matters pertaining to strengthening the educational capacity of Historically Black Colleges and Universities (HBCUs).

The Board shall advise the President in the following areas: (i) improving the identity, visibility, and distinctive capabilities and overall competitiveness of HBCUs; (ii) engaging the

philanthropic, business, government, military, homeland-security, and education communities in a national dialogue regarding new HBCU programs and initiatives; (iii) improving the ability of HBCUs to remain fiscally secure institutions that can assist the Nation in achieving its educational goals and in advancing the interests of all Americans; (iv) elevating the public awareness of, and fostering appreciation of, HBCUs; (v) encouraging public-private investments in HBCUs; and improving government-wide strategic planning related to HBCU competitiveness to align Federal resources and provide the context for decisions about HBCU partnerships, investments, performance goals, priorities, human capital development, and budget planning.

**Meeting Agenda:** The meeting agenda will include roll call; an update from the Board Chairperson; an update from the Office of the Under Secretary, U.S. Department of Education; an update from the Executive Director of the Initiative; remarks from Keisha Lance Bottoms, Senior Advisor to the President for Public Engagement; a status report from each of the Board's subcommittees (Preservation and Growth, Infrastructure, and Finance and Career and Research); a tentative briefing from Wayne A.I. Frederick, president of Howard University and/or David Wilson, president of Morgan State University on the Association for HBCU R2s; and a discussion regarding the Board's first report to the President. The public comment period will begin immediately following the conclusion of such discussions.

**Access to the Meeting:** Members of the public may join the open meeting via the following link: <https://ems8.intellor.com/login/846162>. Upon accessing the link, attendees will be prompted to enter a name(s), title, organization/affiliation (if applicable), and email address.

**Submission of requests to make an oral comment:** The public may use email to request to provide an oral comment pertaining to the work of the Board on January 27, 2023 during the public comment period of the meeting. There will be an allotted time for public comment.

**Method:** Submit a request by email to the [whirsvps@ed.gov](mailto:whirsvps@ed.gov) mailbox by January 25, 2023. Please do not send materials directly to Board members. Include in the subject line of the email request "Oral Comment Request." The email must include the name(s), title, organization/affiliation, mailing address, email address, telephone number, of the person(s) requesting to



speak, and a brief summary (not to exceed one page) of the principal points to be made. All individuals submitting an advance request in accordance with this notice will be added to the public comment request list for oral comment in the order in which they were received. Individuals will be called upon and each commenter will have an opportunity to speak for up to two minutes during the allotted public comment period. All oral comments made will become part of the official record of the meeting.

**Submission of written public comments:** Written comments pertaining to the work of the Board may be addressed electronically to the attention of the Associate Director/ Designated Federal Official. Written comments must be submitted by 11 a.m. on January 25, 2023 to the [whirsvps@ed.gov](mailto:whirsvps@ed.gov) mailbox and include in the subject line "Written Comments: Public Comment." The email must include the name(s), title, organization/affiliation, mailing address, email address, and telephone number of the person(s) making the comment. Comments should be submitted as a Microsoft Word document or in a medium compatible with Microsoft Word (not a PDF file) that is attached to an electronic mail message (email) or provided in the body of an email message. Please do not send material directly to the members of the Board.

**Access to Records of the Meeting:** The Department will post the official report of the meeting on the Board website, <https://sites.ed.gov/whhbcu/policy/presidents-board-of-advisors-pba-on-hbcus> 90 days after the meeting. Pursuant to FACA, the public may also inspect the meeting materials at 400 Maryland Avenue SW, Washington, DC, by emailing [oswhi-hbcu@ed.gov](mailto:oswhi-hbcu@ed.gov) or by calling (202) 453-5634 to schedule an appointment.

**Reasonable Accommodations:** The meeting site is accessible to individuals with disabilities. If you will need an auxiliary aid or service to participate in the meeting (e.g., interpreting service, assistive listening device, or materials in an alternate format), notify the contact person listed in this notice at least one week before the meeting date. Although we will attempt to meet a request received after that date, we may not be able to make available the requested auxiliary aid or service because of insufficient time to arrange it.

**Electronic Access to this Document:** The official version of this document is the document published in the **Federal Register**. Free internet access to the official edition of the **Federal Register** and the Code of Federal Regulations is

available via the Federal Digital System at: [www.gpo.gov/fdsys](http://www.gpo.gov/fdsys). At this site you can view this document, as well as all other documents of this Department published in the **Federal Register**, in text or Adobe Portable Document Format (PDF). To use PDF, you must have Adobe Acrobat Reader, which is available free at the site.

You may also access documents of the Department published in the **Federal Register** by using the article search feature at: [www.federalregister.gov](http://www.federalregister.gov). Specifically, through the advanced search feature at this site, you can limit your search to documents published by the Department.

**Authority:** HBCUs Partners Act, Presidential Executive Order 14041, continued by Executive Order 14048.

**Donna M. Harris-Aikens,**

*Deputy Chief of Staff for Strategy, Office of the Secretary.*

[FR Doc. 2023-00405 Filed 1-10-23; 8:45 am]

**BILLING CODE 4000-01-P**

## DEPARTMENT OF EDUCATION

[Docket No.: ED-2022-SCC-0135]

### Agency Information Collection Activities; Submission to the Office of Management and Budget for Review and Approval; Comment Request; DCIA Aging and Compliance Data Requirements for Guaranty Agencies

**AGENCY:** Federal Student Aid (FSA), Department of Education (ED).

**ACTION:** Notice.

**SUMMARY:** In accordance with the Paperwork Reduction Act (PRA) of 1995, the Department is proposing an extension without change of a currently approved information collection request (ICR).

**DATES:** Interested persons are invited to submit comments on or before February 10, 2023.

**ADDRESSES:** Written comments and recommendations for proposed information collection requests should be submitted within 30 days of publication of this notice. Click on this link [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain) to access the site. Find this information collection request (ICR) by selecting "Department of Education" under "Currently Under Review," then check the "Only Show ICR for Public Comment" checkbox. [Reginfo.gov](http://Reginfo.gov) provides two links to view documents related to this information collection request. Information collection forms and instructions may be found by clicking on the "View Information Collection (IC) List" link. Supporting

statements and other supporting documentation may be found by clicking on the "View Supporting Statement and Other Documents" link.

**FOR FURTHER INFORMATION CONTACT:** For specific questions related to collection activities, please contact Beth Grebeldinger, (202) 377-4018.

**SUPPLEMENTARY INFORMATION:** The Department is especially interested in public comment addressing the following issues: (1) is this collection necessary to the proper functions of the Department; (2) will this information be processed and used in a timely manner; (3) is the estimate of burden accurate; (4) how might the Department enhance the quality, utility, and clarity of the information to be collected; and (5) how might the Department minimize the burden of this collection on the respondents, including through the use of information technology. Please note that written comments received in response to this notice will be considered public records.

**Title of Collection:** DCIA Aging and Compliance Data Requirements for Guaranty Agencies.

**OMB Control Number:** 1845-0160.

**Type of Review:** Extension without change of a currently approved ICR.

**Respondents/Affected Public:** Private Sector; State, Local, and Tribal Governments.

**Total Estimated Number of Annual Responses:** 450.

**Total Estimated Number of Annual Burden Hours:** 1,188.

**Abstract:** The Department of Education (the Department) is requesting an extension of the currently approved Guaranty Agencies (GA) reporting requirements for Office of Management and Budget (OMB) approval. The reporting requirements include minor edits together with updated GA and FSA contacts.

The Department is required to report to the U.S. Department of the Treasury (Treasury) the status and condition of its non-tax debt portfolio in accordance with the requirements of the Debt Collection Improvement Act of 1996 (DCIA) and the Digital Accountability and Transparency Act of 2014 (DATA Act). Receivable information is reported to Treasury via the Treasury Report on Receivables and Debt Collection Activities (previously called the TROR).

The Department is unable to prepare an accurate and compliant Treasury Report based on the data it currently receives from its GAs. The continuing guidance requires the GAs to age debt according to DCIA; report the eligibility of DCIA-aged debt for referral to the Treasury Offset Program (TOP); and

report compliance with Form 1099-C reporting.

The updated document is titled DCIA Aging and Compliance Data Requirements for Guaranty Agencies (the Requirements). The Department plans to issue the Requirements to the GAs in Fiscal Year 2023. The data requirements for GA's are not changing. The updated document includes minor edits together with updated GA and FSA contacts.

Dated: January 5, 2023.

**Kun Mullan,**

*PRA Coordinator, Strategic Collections and Clearance Governance and Strategy Division, Office of Chief Data Officer, Office of Planning, Evaluation and Policy Development.*

[FR Doc. 2023-00331 Filed 1-10-23; 8:45 am]

**BILLING CODE 4000-01-P**

## DEPARTMENT OF ENERGY

[Docket No. 14-96-LNG]

### Notice of Availability of the Final Supplemental Environmental Impact Statement for the Alaska LNG Project

**AGENCY:** Office of Fossil Energy and Carbon Management, Department of Energy.

**ACTION:** Notice of availability.

**SUMMARY:** The Department of Energy (DOE) announces the availability of the Final Supplemental Environmental Impact Statement (SEIS) for the Alaska LNG Project (DOE/EIS-0512-S1). The Final SEIS evaluates the potential environmental impacts associated with Alaska LNG Project LLC's (Alaska LNG) existing authorization to export liquefied natural gas (LNG) from Alaska Gasline Development Corporation's (AGDC) proposed Alaska LNG Project to non-free trade agreement countries. DOE prepared the Final SEIS in accordance with the National Environmental Policy Act of 1969 (NEPA) to inform its decision on rehearing under the Natural Gas Act (NGA).

**ADDRESSES:**

*Availability of the Final SEIS:* DOE mailed notification letters to announce the *Notice of Availability* of the Final SEIS to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Tribes; other interested individuals and groups; and newspapers and libraries in the project area.

An electronic copy of the Final SEIS is available at <https://www.energy.gov/nepa/doeis-0512-s1-supplemental-environmental-impact-statement-alaska-lng-project>.

Paper copies of the Final SEIS will be available for public review at the following locations: Anchorage Public Library (Z.J. Loussac Library), 3600 Denali Street, Anchorage, AK 99503; Arctic Interagency Visitor Center, Mile 175 Dalton Highway, Coldfoot, AK 99701; Charles Evans Community School Library, 299 Antoski Drive, Galena, AK 99741; Noel Wien Public Library, 1215 Cowles Street, Fairbanks, AK 99701; Kenai Community Library, 163 Main Street Loop, Kenai, AK 99611; Trapper Creek Library, 8901 East Devonshire Drive, Trapper Creek, AK 99683; Tri-Valley Community Library, Suntrana Road, P.O. Box 518, Healy, AK 99743; and Wasilla Public Library, 500 North Crusey Street, Wasilla, AK 99654. Additional copies of the Final SEIS may be requested from the point of contact set forth below.

**FOR FURTHER INFORMATION CONTACT:**

Mark Lusk, NEPA Compliance Officer, National Energy Technology Laboratory, U.S. Department of Energy, (304) 285-4145, [mark.lusk@netl.doe.gov](mailto:mark.lusk@netl.doe.gov).

**SUPPLEMENTARY INFORMATION:**

**Background**

DOE's Office of Fossil Energy and Carbon Management<sup>1</sup> is in the process of rehearing DOE/FE Order No. 3643-A, issued on August 20, 2020, in Docket No. 14-96-LNG (Alaska LNG Order).<sup>2</sup> In the Alaska LNG Order, DOE authorized Alaska LNG to export LNG from AGDC's proposed Alaska LNG Project to countries that do not have a free trade agreement (FTA) requiring national treatment for trade in natural gas, and with which trade is not prohibited by U.S. law or policy (non-FTA countries), under NGA section 3(a).<sup>3</sup>

As approved by the Federal Energy Regulatory Commission (FERC) on May 21, 2020, the Alaska LNG Project involves producing natural gas from resources on the North Slope of Alaska, transporting the natural gas on a proposed 806.9-mile-long pipeline, and exporting the natural gas in the form of LNG by vessel from a liquefaction facility to be constructed in the Nikiski area of the Kenai Peninsula in south-

central Alaska.<sup>4</sup> Under the Alaska LNG Order, Alaska LNG is currently authorized to export this LNG in a volume equivalent to 929 billion cubic feet (Bcf) per year of natural gas (2.55 Bcf per day), for a term of 30 years.

On April 15, 2021, in Order No. 3643-B, DOE announced that it was granting rehearing of the Alaska LNG Order under the NGA for the purpose of conducting additional environmental analysis.<sup>5</sup> DOE stated that, based on findings from this additional analysis, DOE intended to issue an order under NGA section 3(a) in which DOE may exercise its authority to reaffirm, modify, or set aside the Alaska LNG Order, in whole or in part.

Subsequently, on July 2, 2021, DOE published a "Notice of Intent to Prepare a Supplemental Environmental Impact Statement for the Alaska LNG Project"<sup>6</sup> under NEPA.<sup>7</sup> The SEIS was to include analysis from two environmental studies, and DOE's National Energy Technology Laboratory (NETL) was tasked with conducting both studies.<sup>8</sup>

The Final SEIS being issued today supplements the Final Environmental Impact Statement (EIS) for the Alaska LNG Project published by FERC on March 6, 2020, and adopted by DOE on March 16, 2020 (DOE/EIS-0512). Specifically, the Final SEIS (1) examines the potential upstream environmental effects associated with incremental natural gas production on the North Slope of Alaska to support Alaska LNG's authorized exports of LNG, and (2) includes a life cycle analysis calculating the greenhouse gas emissions associated with exporting LNG by vessel from the proposed Alaska LNG Project to import markets in Asia (the markets targeted for exports from Alaska) and potentially in other regions.

**NEPA Process and Public Involvement**

DOE prepared the SEIS in accordance with the Council on Environmental Quality (CEQ) regulations at title 40,

<sup>4</sup> See *Alaska Gasline Dev. Corp.*, Order Granting Authorization Under Section 3 of the Natural Gas Act, FERC Docket No. CP17-178-000, 171 FERC ¶ 61,134 (2020). AGDC, an independent, public corporation of the State of Alaska, holds the authorization from FERC to site, construct, and operate the proposed Alaska LNG Project.

<sup>5</sup> See *Alaska LNG Project LLC*, DOE/FE Order No. 3643-B, Docket 14-96-LNG, Order on Rehearing (Apr. 15, 2021), [www.energy.gov/sites/default/files/2021-04/ord3643b.pdf](http://www.energy.gov/sites/default/files/2021-04/ord3643b.pdf). DOE's Order on Rehearing granted a Request for Rehearing filed by Sierra Club. See *id.* at 1-2, 5-6.

<sup>6</sup> See U.S. Dep't of Energy, Notice of Intent to Prepare a Supplemental Environmental Impact Statement for the Alaska LNG Project, 86 FR 35280 (July 2, 2021); see also [www.energy.gov/nepa/articles/doeis-0512-s1-notice-intent-july-2-2021](http://www.energy.gov/nepa/articles/doeis-0512-s1-notice-intent-july-2-2021).

<sup>7</sup> 42 U.S.C. 4321 *et seq.*

<sup>8</sup> 86 FR 35281.

<sup>1</sup> The Office of Fossil Energy (FE) changed its name to the Office of Fossil Energy and Carbon Management (FECM) on July 4, 2021.

<sup>2</sup> See *Alaska LNG Project LLC*, DOE/FE Order No. 3643-A, Docket 14-96-LNG, Final Opinion and Order Granting Long-Term Authorization to Export Liquefied Natural Gas to Non-Free Trade Agreement Nations (Aug. 20, 2020), [www.energy.gov/fecm/downloads/alaska-lng-project-llc-fe-dkt-no-14-96-lng-0](http://www.energy.gov/fecm/downloads/alaska-lng-project-llc-fe-dkt-no-14-96-lng-0). For all DOE documents referenced herein, please see the Alaska LNG docket at [www.energy.gov/fecm/articles/alaska-lng-project-llc-fe-dkt-no-14-96-lng](http://www.energy.gov/fecm/articles/alaska-lng-project-llc-fe-dkt-no-14-96-lng).

<sup>3</sup> 15 U.S.C. 717b(a).

*Code of Federal Regulations*, parts 1500–1508 (40 CFR part 1500–1508) and DOE's NEPA implementing procedures at 10 CFR part 1021. DOE announced a Notice of Availability (NOA) for the Draft SEIS on June 24, 2022, and published the NOA in the **Federal Register** on June 29, 2022.<sup>9</sup> DOE invited public comments on the Draft SEIS during a 45-day period that began on July 1, 2022, and extended through August 15, 2022. During the public comment period, a virtual public meeting was held on July 20, 2022. DOE collected verbal and written comments during the public meeting and throughout the public comment period. All comments received during the 45-day comment period were considered during the preparation of the Final SEIS.

#### DOE Action

DOE will consider the information provided in the Final SEIS, among other factors, as part of the Record of Decision (ROD) to reaffirm, modify, or set aside the Alaska LNG Order. The ROD will be issued no sooner than 30 days from the date that a Notice of Availability is published by the United States Environmental Protection Agency in the **Federal Register**. In particular, DOE has announced that it will issue the final order and ROD on or before March 30, 2023.<sup>10</sup>

Signed in Washington, DC, on January 6, 2023.

**Amy Sweeney,**

*Director, Office of Regulation, Analysis, and Engagement, Office of Resource Sustainability.*

[FR Doc. 2023–00345 Filed 1–10–23; 8:45 am]

**BILLING CODE 6450–01–P**

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## DEPARTMENT OF ENERGY

### Environmental Management Site-Specific Advisory Board, Oak Ridge

**AGENCY:** Office of Environmental Management, Department of Energy.

**ACTION:** Notice of open meeting.

**SUMMARY:** This notice announces an in-person/virtual hybrid open meeting of the Environmental Management Site-Specific Advisory Board (EM SSAB), Oak Ridge. The Federal Advisory Committee Act requires that public notice of this meeting be announced in the **Federal Register**.

**DATES:** Wednesday, February 8, 2023; 6 p.m.–8 p.m. ET.

**ADDRESSES:** This meeting will be open to the public virtually via Zoom only. To attend virtually, please send an email to: [orssab@orem.doe.gov](mailto:orssab@orem.doe.gov) no later than 5:00 p.m. ET on Wednesday, February 1, 2023.

Board members, Department of Energy (DOE) representatives, agency liaisons, and Board support staff will participate in-person, following COVID–19 precautionary measures, at:

DOE Information Center, Office of Science and Technical Information, 1 Science.gov Way, Oak Ridge, Tennessee 37831.

Attendees should check the website listed below for any meeting format changes due to COVID–19 protocols.

**FOR FURTHER INFORMATION CONTACT:**

Melyssa P. Noe, Alternate Deputy Designated Federal Officer, U.S. Department of Energy, Oak Ridge Office of Environmental Management (OREM), P.O. Box 2001, EM–942, Oak Ridge, TN 37831; Phone (865) 241–3315; or E-Mail: [Melyssa.Noe@orem.doe.gov](mailto:Melyssa.Noe@orem.doe.gov). Or visit the website at [www.energy.gov/orssab](http://www.energy.gov/orssab).

**SUPPLEMENTARY INFORMATION:**

*Purpose of the Board:* The purpose of the Board is to make recommendations to DOE–EM and site management in the areas of environmental restoration, waste management, and related activities.

*Tentative Agenda:*

- Comments from the Alternate Deputy Designated Federal Officer (DDFO)
- Comments from DOE, Tennessee Department of Environment and Conservation, and Environmental Protection Agency Liaisons
- Presentation
- Public Comment Period
- Motions/Approval of October 12, 2022 and November 9, 2022 Meeting Minutes
- Status of Outstanding Recommendations
- Alternate DDFO Report
- Subcommittee Reports

*Public Participation:* The in-person/virtual hybrid meeting is open to the public virtually via Zoom only. Written statements may be filed with the Board via email either before or after the meeting. Public comments received by no later than 5 p.m. ET on Wednesday, February 1, 2023, will be read aloud during the meeting. Comments will be accepted after the meeting, by no later than 5 p.m. ET on Monday, February 13, 2023. Please submit comments to [orssab@orem.doe.gov](mailto:orssab@orem.doe.gov). The Deputy Designated Federal Officer is empowered to conduct the meeting in a fashion that will facilitate the orderly conduct of business. Individuals wishing to submit written public

comments should email them as directed above.

*Minutes:* Minutes will be available by emailing or calling Melyssa P. Noe at the email address and telephone number listed above. Minutes will also be available at the following website: <https://www.energy.gov/orem/listings/oak-ridge-site-specific-advisory-board-meetings>.

Signed in Washington, DC, on January 6, 2023.

**LaTanya Butler,**

*Deputy Committee Management Officer.*

[FR Doc. 2023–00362 Filed 1–10–23; 8:45 am]

**BILLING CODE 6450–01–P**

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## DEPARTMENT OF ENERGY

### Nuclear Energy Advisory Committee

**AGENCY:** Office of Nuclear Energy, Department of Energy.

**ACTION:** Notice of open meeting.

**SUMMARY:** This notice announces a hybrid virtual and in-person open meeting of the Nuclear Energy Advisory Committee. The Federal Advisory Committee Act requires that public notice of this meeting be announced in the **Federal Register**.

**DATES:** Thursday, February 16, 2023; 9:00 a.m.–4:30 p.m.

**ADDRESSES:** This hybrid meeting will be open virtually for members of the public via Zoom only. Committee members, Department of Energy (DOE) representatives, agency liaisons, and support staff will participate in-person, strictly following COVID–19 precautionary measures, at: James V. Forrestal Building, U.S. Department of Energy, 1000 Independence Ave. SW, Washington, DC 20585.

**FOR FURTHER INFORMATION CONTACT:** Luke Branscum, Designated Federal Officer, U.S. Department of Energy, 1000 Independence Ave. SW, Washington, DC 20585; (202) 586–4290; email: [Luke.Branscum@nuclear.energy.gov](mailto:Luke.Branscum@nuclear.energy.gov).

**SUPPLEMENTARY INFORMATION:**

*Purpose of the Committee:* The Nuclear Energy Advisory Committee provides advice and recommendations to the Assistant Secretary for Nuclear Energy on national policy and scientific aspects of nuclear issues of concern to DOE; provides periodic reviews of the various program elements within DOE's nuclear programs and recommendations based thereon; ascertains the needs, views, and priorities of DOE's nuclear programs; advises on long-range plans, priorities, and strategies to address more effectively the technical, financial, and

<sup>9</sup> 87 FR 38730 (June 29, 2022).

<sup>10</sup> See *Alaska LNG Project LLC*, Docket 14–96–LNG, Second Notice of Amended Schedule for Supplemental Environmental Impact Statement (Oct. 28, 2022).

policy aspects of such programs; and advises on appropriate levels of resources to develop those plans, priorities, and strategies. The committee is composed of 11 individuals of diverse backgrounds selected for their technical expertise and experience, established records of distinguished professional service, and their knowledge of issues that pertain to nuclear energy.

*Purpose of Meeting:* The Nuclear Energy Advisory Committee will hold a meeting on February 16, 2023, to discuss the priorities of the Office of Nuclear Energy and the Department of Energy, to refine priorities for the Committee, and to provide an update on subcommittee progress to date.

#### Tentative Agenda

- Welcome and Opening Remarks
- Office of Nuclear Energy Priorities
  - Nuclear Energy Infrastructure
- Subcommittee Updates
  - Infrastructure
  - Workforce of the Future
  - International Engagements
  - Consent-based Siting
- Public Comment Period and Closing Remarks

*Public Participation:* Members of the public who wish to attend can do so virtually via Zoom. All attendees are requested to register by 4:00 p.m. on Friday, February 10th for the meeting at: <https://forms.office.com/g/wTUc0zcrzd> or by emailing [Luke.Branscum@nuclear.energy.gov](mailto:Luke.Branscum@nuclear.energy.gov). Written statements may be filed with the Committee either before or after the meeting. Individuals who wish to make oral statements pertaining to agenda items should contact Luke Branscum at the address or telephone listed above. Requests for an oral statement must be received at least five days prior to the meeting. Reasonable provision will be made to include requested oral statements in the agenda. The Designated Federal Officer is empowered to conduct the meeting in a fashion that will facilitate the orderly conduct of business. Individuals wishing to make public comments will be provided a maximum of five minutes to present their comments. Anyone attending the in-person meeting will be required to present government-issued identification. Please provide your name, organization, citizenship, and contact information to Luke Branscum at the address or phone number listed above.

*Minutes:* Minutes will be available by contacting Luke Branscum at the address or phone number listed above. Minutes will also be available at the following website: <https://www.energy.gov/ne/nuclear-energy-advisory-committee>.

Signed in Washington, DC on January 5, 2023.

**LaTanya Butler,**

*Deputy Committee Management Officer.*

[FR Doc. 2023-00344 Filed 1-10-23; 8:45 am]

**BILLING CODE 6450-01-P**

## DEPARTMENT OF ENERGY

### Federal Energy Regulatory Commission

#### Combined Notice of Filings #1

Take notice that the Commission received the following Complaints and Compliance filings in EL Dockets:

*Docket Numbers:* EL23-21-000.

*Applicants:* CORE Electric Cooperative, Grand Valley Rural Power Lines, Inc., Holy Cross Electric Association, Inc., and Yampa Valley Electric Association, Inc. v. Public Service Company of Colorado.

*Description:* Complaint of CORE Electric Cooperative, et al. v. Public Service Company of Colorado.

*Filed Date:* 12/30/22.

*Accession Number:* 20230104-5111.

*Comment Date:* 5 p.m. ET 1/30/23.

Take notice that the Commission received the following electric rate filings:

*Docket Numbers:* ER10-1618-018; ER10-1631-020; ER10-1854-020; ER10-1892-023; ER10-2678-021; ER10-2729-015; ER10-2739-036; ER10-2744-021; ER11-3320-020; ER11-3321-013; ER13-2316-018; ER14-19-019; ER14-1219-015; ER14-2548-011; ER16-1652-023; ER16-1732-014; ER16-2405-014; ER16-2406-015; ER17-989-013; ER17-990-013; ER17-992-013; ER17-993-013; ER17-1946-013; ER17-1947-007; ER17-1948-007; ER18-95-010; ER20-660-010; ER20-1440-006; ER21-202-002; ER21-1133-003; ER22-425-003; ER22-1241-002.

*Applicants:* REV Energy Marketing, LLC, Enerwise Global Technologies, LLC, Hummel Station, LLC, Centrica Business Solutions Optimize, LLC, Yards Creek Energy, LLC, Bolt Energy Marketing, LLC, Buchanan Energy Services Company, LLC, Helix Ravenswood, LLC, Helix Maine Wind Development, LLC, Helix Ironwood, LLC, Bath County Energy, LLC, Springdale Energy, LLC, Gans Energy, LLC, Chambersburg Energy, LLC, Rockford Power, LLC, Rockford Power II, LLC, Aurora Generation, LLC, LifeEnergy LLC, Ocean State Power, Armstrong Power, LLC, West Deptford Energy, LLC, Seneca Generation, LLC, Wallingford Energy LLC, LSP University Park, LLC, Riverside Generating Company, L.L.C., LS Power Marketing,

LLC, Buchanan Generation, LLC, Troy Energy, LLC, Columbia Energy LLC, Doswell Limited Partnership, Rolling Hills Generating, L.L.C.

*Description:* Updated Market Power Analysis for Northeast Region of LS Power Marketing, LLC, et al.

*Filed Date:* 12/30/22.

*Accession Number:* 20221230-5411.

*Comment Date:* 5 p.m. ET 2/28/23.

*Docket Numbers:* ER10-1776-005;

ER10-2822-022; ER10-2824-005;

ER10-2825-006; ER10-2831-004;

ER10-2957-006; ER10-2995-006;

ER10-2996-005; ER10-2999-005;

ER10-3000-005; ER10-3009-007;

ER10-3013-006; ER10-3014-003;

ER10-3029-005; ER11-2196-011;

ER16-1250-015; ER17-1243-003;

ER17-1769-004; ER19-2360-004;

ER21-2272-003; ER21-2748-003;

ER21-2847-003; ER22-2173-002;

ER22-2174-002.

*Applicants:* Daybreak Solar, LLC, Bakeoven Solar, LLC, Montague Solar, LLC, Lund Hill Solar, LLC, Bracewell LLP, Golden Hills Wind Farm, LLC, Montague Wind Power Facility, LLC, Solar Star Oregon II, LLC, Twin Buttes Wind II LLC, Avangrid Renewables, LLC, San Luis Solar LLC, Klondike Wind Power III LLC, Twin Buttes Wind LLC, Star Point Wind Project LLC, Pebble Springs Wind LLC, Klondike Wind Power II LLC, Klondike Wind Power LLC, Klamath Energy LLC, Juniper Canyon Wind Power LLC, Hay Canyon Wind LLC, Colorado Green Holdings LLC, Big Horn II Wind Project LLC, Big Horn Wind Project LLC, Atlantic Renewable Projects II LLC, Leaning Juniper Wind Power II LLC.

*Description:* Updated Market Power Analysis for Northwest Region of Atlantic Renewable Projects II LLC, et al.

*Filed Date:* 12/30/22.

*Accession Number:* 20221230-5412.

*Comment Date:* 5 p.m. ET 2/28/23.

*Docket Numbers:* ER10-2042-042; ER10-1942-034; ER17-696-022; ER10-1938-037; ER10-1934-036; ER10-1893-036; ER10-3051-041; ER10-2985-040; ER10-3049-041; ER10-1877-010; ER11-4369-021; ER16-2218-022; ER10-1862-036.

*Applicants:* Power Contract Financing, L.L.C., North American Power Business, LLC, North American Power and Gas, LLC, Hermiston Power, LLC, Champion Energy Services, LLC, Champion Energy Marketing LLC, Champion Energy, LLC, CES Marketing X, LLC, CES Marketing IX, LLC, Calpine Power America—CA, LLC, Calpine Energy Solutions, LLC, Calpine Construction Finance Co., L.P., Calpine Energy Services, L.P.

*Description:* Updated Market Power Analysis for Northwest Region of Calpine Energy Services, L.P, et al.

*Filed Date:* 1/3/23.

*Accession Number:* 20230103–5523.

*Comment Date:* 5 p.m. ET 3/6/23.

*Docket Numbers:* ER10–2822–023; ER16–1250–016; ER11–2112–011; ER10–2828–007; ER10–2285–008; ER17–1241–002; ER16–2285–005; ER10–2423–011; ER10–2404–011; ER10–2812–018; ER10–1291–025; ER10–2843–017; ER12–2649–006; ER10–1725–006; ER10–3001–007; ER10–3002–007; ER10–3004–008; ER12–422–008; ER10–2301–006; ER19–2361–002; ER20–2830–001; ER10–3010–007; ER10–2306–006; ER12–96–010; ER10–3031–007; ER10–3160–005; ER16–1637–004.

*Applicants:* UIL Distributed Resources, LLC, The United Illuminating Company, Streater-Cayuga Ridge Wind Power LLC, South Chestnut LLC, Rochester Gas and Electric Corporation, Providence Heights Wind, LLC, PPM Roaring Brook, LLC, Otter Creek Wind Farm LLC, New York State Electric & Gas Corporation, New England Wind, LLC, Locust Ridge Wind Farm II, LLC, Locust Ridge Wind Farm, LLC, Lempster Wind, LLC, Hardscrabble Wind Power LLC, Groton Wind, LLC, GenConn Middletown LLC, GenConn Energy LLC, GenConn Devon LLC, Flat Rock Windpower II LLC, Flat Rock Windpower LLC, Desert Wind Farm LLC, Deerfield Wind, LLC, Central Maine Power Company, Casselman Windpower LLC, Blue Creek Wind Farm LLC, Avangrid Renewables, LLC, Atlantic Renewable Projects II LLC.

*Description:* Triennial Market Power Analysis for Northeast Region of Atlantic Renewable Projects II LLC, et al.

*Filed Date:* 1/3/23.

*Accession Number:* 20230103–5522.

*Comment Date:* 5 pm ET 3/6/23.

*Docket Numbers:* ER11–2639–015.

*Applicants:* Ridge Crest Wind Partners, LLC.

*Description:* Updated Market Power Analysis for Northwest Region of Ridge Crest Wind Partners, LLC.

*Filed Date:* 1/3/23.

*Accession Number:* 20230103–5519.

*Comment Date:* 5 p.m. ET 3/6/23.

*Docket Numbers:* ER16–915–006; ER10–2861–011; ER12–1308–014; ER13–1504–012; ER15–1952–012; ER16–612–001.

*Applicants:* Greeley Energy Facility, LLC, Pavant Solar LLC, SWG Arapahoe, LLC, Palouse Wind, LLC, Fountain Valley Power, L.L.C., Comanche Solar PV, LLC.

*Description:* Updated Market Power Analysis for Northwest Region of Comanche Solar PV, LLC, et al.

*Filed Date:* 1/3/23.

*Accession Number:* 20230103–5521.

*Comment Date:* 5 pm ET 3/6/23.

*Docket Numbers:* ER19–1044–006.  
*Applicants:* Telocaset Wind Power Partners, LLC.

*Description:* Updated Market Power Analysis for Northwest Region and Notice of Change in Status of Telocaset Wind Power Partners, LLC.

*Filed Date:* 1/3/23.

*Accession Number:* 20230103–5513.

*Comment Date:* 5 p.m. ET 3/6/23.

*Docket Numbers:* ER19–2439–001

*Applicants:* Tampa Electric Company.

*Description:* Notice of Change in Status of Tampa Electric Company.

*Filed Date:* 1/4/23.

*Accession Number:* 20230104–5201.

*Comment Date:* 5 p.m. ET 1/25/23.

*Docket Numbers:* ER21–1044–001.

*Applicants:* Tri-State Generation and Transmission Association, Inc.

*Description:* Updated Market Power Analysis for Northwest Region of Hartree Partners, LP.

*Filed Date:* 1/3/23.

*Accession Number:* 20230103–5518.

*Comment Date:* 5 p.m. ET 3/6/23.

*Docket Numbers:* ER23–397–001.

*Applicants:* PJM Interconnection, L.L.C.

*Description:* Tariff Amendment: Request to Defer Action-Amendment to ISA & ICSA, SA# 5564 & 5565; Queue AA2–161 to be effective 12/31/9998.

*Filed Date:* 1/5/23.

*Accession Number:* 20230105–5077.

*Comment Date:* 5 p.m. ET 1/26/23.

*Docket Numbers:* ER23–580–001.

*Applicants:* PJM Interconnection, L.L.C.

*Description:* Tariff Amendment: Request to Defer Action on Amendment to WMPA, SA No. 5591; Queue No. AE2–054 to be effective 12/31/9998.

*Filed Date:* 1/5/23.

*Accession Number:* 20230105–5075.

*Comment Date:* 5 p.m. ET 1/26/23.

*Docket Numbers:* ER23–771–000.

*Applicants:* Midcontinent Independent System Operator, Inc.

*Description:* § 205(d) Rate Filing: 2023–01–05\_SA 3392 Entergy Arkansas-New Madrid Solar 1st Rev GIA (J944) to be effective 12/20/2022.

*Filed Date:* 1/5/23.

*Accession Number:* 20230105–5023.

*Comment Date:* 5 p.m. ET 1/26/23.

*Docket Numbers:* ER23–772–000.

*Applicants:* Arizona Public Service Company.

*Description:* § 205(d) Rate Filing: Service Agreement No. 407, Ditat Deus Solar LGIA to be effective 12/8/2022.

*Filed Date:* 1/5/23.

*Accession Number:* 20230105–5036.

*Comment Date:* 5 p.m. ET 1/26/23.

*Docket Numbers:* ER23–773–000.

*Applicants:* Pacific Gas and Electric Company.

*Description:* § 205(d) Rate Filing: CCSF missed WPAs filing (WDT SA 275) to be effective 3/7/2023.

*Filed Date:* 1/5/23.

*Accession Number:* 20230105–5047.

*Comment Date:* 5 p.m. ET 1/26/23.

*Docket Numbers:* ER23–774–000.

*Applicants:* Midcontinent Independent System Operator, Inc.

*Description:* § 205(d) Rate Filing: 2023–01–05\_SA 2672 Termination of METC-Lansing Brd of Water IFA to be effective 1/6/2023.

*Filed Date:* 1/5/23.

*Accession Number:* 20230105–5054.

*Comment Date:* 5 p.m. ET 1/26/23.

*Docket Numbers:* ER23–775–000.

*Applicants:* PJM Interconnection, L.L.C.

*Description:* § 205(d) Rate Filing: PJM submits Amended NJ SAA Agreement as Rate Sch. No. 49 to be effective 4/15/2022.

*Filed Date:* 1/5/23.

*Accession Number:* 20230105–5067.

*Comment Date:* 5 p.m. ET 1/26/23.

*Docket Numbers:* ER23–776–000.

*Applicants:* PJM Interconnection, L.L.C.

*Description:* § 205(d) Rate Filing: Original ISA, Service Agreement No. 6747; Queue No. AF1–290 to be effective 12/7/2022.

*Filed Date:* 1/5/23.

*Accession Number:* 20230105–5068.

*Comment Date:* 5 p.m. ET 1/26/23.

*Docket Numbers:* ER23–777–000.

*Applicants:* New York Independent System Operator, Inc., Niagara Mohawk Power Corporation.

*Description:* § 205(d) Rate Filing: New York Independent System Operator, Inc. submits tariff filing per 35.13(a)(2)(iii): NYISO-National Grid Joint 205: Amended SGIA NYISO NatGrid Pattersonville SA2544 to be effective 12/20/2022.

*Filed Date:* 1/5/23.

*Accession Number:* 20230105–5071.

*Comment Date:* 5 p.m. ET 1/26/23.

*Docket Numbers:* ER23–778–000.

*Applicants:* Avista Corporation.

*Description:* Petition for Limited

Waiver of Avista Corporation.

*Filed Date:* 1/5/23.

*Accession Number:* 20230105–5101.

*Comment Date:* 5 p.m. ET 1/26/23.

*Docket Numbers:* ER23–779–000.

*Applicants:* PJM Interconnection, L.L.C.

*Description:* § 205(d) Rate Filing: Revisions to Sch. 12—Appx A and C—

Dec. 2022 RTEP, 30-Day Comment Period to be effective 4/5/2023.

*Filed Date:* 1/5/23.

*Accession Number:* 20230105–5117.

*Comment Date:* 5 p.m. ET 1/26/23.

Take notice that the Commission received the following electric securities filings:

*Docket Numbers:* ES23–24–000.

*Applicants:* Citizens S-Line Transmission LLC.

*Description:* Application Under Section 204 of the Federal Power Act for Authorization to Issue Securities of Citizens S-Line Transmission LLC.

*Filed Date:* 1/3/23.

*Accession Number:* 20230103–5524.

*Comment Date:* 5 p.m. ET 1/24/23.

The filings are accessible in the Commission's eLibrary system (<https://elibrary.ferc.gov/idmws/search/fercgensearch.asp>) by querying the docket number.

Any person desiring to intervene or protest in any of the above proceedings must file in accordance with Rules 211 and 214 of the Commission's Regulations (18 CFR 385.211 and 385.214) on or before 5:00 p.m. Eastern time on the specified comment date. Protests may be considered, but intervention is necessary to become a party to the proceeding.

eFiling is encouraged. More detailed information relating to filing requirements, interventions, protests, service, and qualifying facilities filings can be found at: <http://www.ferc.gov/docs-filing/efiling/filing-req.pdf>. For other information, call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Dated: January 5, 2023.

**Debbie-Anne A. Reese,**

*Deputy Secretary.*

[FR Doc. 2023–00366 Filed 1–10–23; 8:45 am]

**BILLING CODE 6717–01–P**

## DEPARTMENT OF ENERGY

### Federal Energy Regulatory Commission

[Docket No. CP23–29–000]

#### Saguaro Connector Pipeline, LLC; Notice of Application and Establishing Intervention Deadline

Take notice that on December 20, 2022, Saguaro Connector Pipeline, LLC (Saguaro), 100 West Fifth Street, Tulsa, Oklahoma 74103, filed in the above referenced docket, an application under section 3 of the Natural Gas Act (NGA), and part 153 of the Commission's regulations requesting authorization to site, construct, connect, operate, and maintain certain natural gas pipeline

facilities at a new International Boundary crossing (Border Facilities) for the export of natural gas between the United States, in Hudspeth County, Texas, to Chihuahua, Mexico. Saguaro also requests issuance of a Presidential Permit also under part 153 of the Commission's regulations authorizing it to site, construct, connect, operate, and maintain these same Border Facilities.

More specifically, these Border Facilities will consist of approximately 1,000 feet of 48-inch-diameter pipeline from the International Boundary at the center of the Rio Grande River to a point along the pipeline approximately 1,000 feet inland from the river, located approximately 18 miles southwest of Sierra Blanca in Hudspeth County, Texas. The Border Facilities will cost approximately \$9,500,000 and have an ultimate design capacity of approximately 2.834 billion standard cubic feet per day and up to a Maximum Allowable Operating Pressure of approximately 1,480 pounds per square inch gauge, all as more fully set forth in the application which is on file with the Commission and open to public inspection.

In its application, Saguaro states that the Border Facilities will deliver natural gas supplies from the Waha Hub in Pecos County, Texas, to Mexico to meet international demand for natural gas. Saguaro states that the Border Facilities will interconnect with a new intrastate pipeline that it will own and operate that is located wholly in the State of Texas and will be designed to transport natural gas from the Waha Hub in Pecos County, Texas to the Border Facilities. Saguaro also states that the Border Facilities will allow a new interconnection at the International Boundary with NewCo Mexico Pipeline which has a planned delivery to a natural gas export facility under development on the West Coast of Mexico.

In addition to publishing the full text of this document in the **Federal Register**, the Commission provides all interested persons an opportunity to view and/or print the contents of this document via the internet through the Commission's Home Page (<http://www.ferc.gov>) using the "eLibrary" link. Enter the docket number excluding the last three digits in the docket number field to access the document. At this time, the Commission has suspended access to the Commission's Public Reference Room, due to the proclamation declaring a National Emergency concerning the Novel Coronavirus Disease (COVID–19), issued by the President on March 13, 2020. For assistance, contact FERC at

[FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov) or call toll-free, (866) 208–3676 or TTY, (202) 502–8659.

Any questions regarding this proposed project should be directed to Denise Adams, Director, Regulatory Affairs, ONEOK, Inc., 100 West Fifth Street, Tulsa Oklahoma 74103, at (918) 732–1408, or by email to [regulatoryaffairs@oneok.com](mailto:regulatoryaffairs@oneok.com).

Pursuant to section 157.9 of the Commission's Rules of Practice and Procedure,<sup>1</sup> within 90 days of this Notice the Commission staff will either: complete its environmental review and place it into the Commission's public record (eLibrary) for this proceeding; or issue a Notice of Schedule for Environmental Review. If a Notice of Schedule for Environmental Review is issued, it will indicate, among other milestones, the anticipated date for the Commission staff's issuance of the final environmental impact statement (FEIS) or environmental assessment (EA) for this proposal. The filing of an EA in the Commission's public record for this proceeding or the issuance of a Notice of Schedule for Environmental Review will serve to notify federal and state agencies of the timing for the completion of all necessary reviews, and the subsequent need to complete all federal authorizations within 90 days of the date of issuance of the Commission staff's FEIS or EA.

#### Public Participation

There are three ways to become involved in the Commission's review of this project: you can file a protest to the project, you can file a motion to intervene in the proceeding, and you can file comments on the project. There is no fee or cost for filing protests, motions to intervene, or comments. The deadline for filing protests, motions to intervene, and comments is 5:00 p.m. Eastern Time on January 26, 2023. How to file protests, motions to intervene, and comments is explained below.

#### Protests

Pursuant to section 157.205 of the Commission's regulations under the NGA,<sup>2</sup> any person<sup>3</sup> or the Commission's staff may file a protest to the request. If no protest is filed within the time allowed or if a protest is filed and then withdrawn within 30 days after the allowed time for filing a protest, the proposed activity shall be deemed to be authorized effective the day after the time allowed for protest. If

<sup>1</sup> 18 CFR (Code of Federal Regulations) 157.9.

<sup>2</sup> 18 CFR 157.205.

<sup>3</sup> Persons include individuals, organizations, businesses, municipalities, and other entities. 18 CFR 385.102(d).

a protest is filed and not withdrawn within 30 days after the time allowed for filing a protest, the instant request for authorization will be considered by the Commission.

Protests must comply with the requirements specified in section 157.205(e) of the Commission's regulations,<sup>4</sup> and must be submitted by the protest deadline, which is January 26, 2023. A protest may also serve as a motion to intervene so long as the protestor states it also seeks to be an intervenor.

### Interventions

Any person has the option to file a motion to intervene in this proceeding. Only intervenors have the right to request rehearing of Commission orders issued in this proceeding and to subsequently challenge the Commission's orders in the U.S. Circuit Courts of Appeal.

To intervene, you must submit a motion to intervene to the Commission in accordance with Rule 214 of the Commission's Rules of Practice and Procedure<sup>5</sup> and the regulations under the NGA<sup>6</sup> by the intervention deadline for the project, which is January 26, 2023. As described further in Rule 214, your motion to intervene must state, to the extent known, your position regarding the proceeding, as well as your interest in the proceeding. For an individual, this could include your status as a landowner, ratepayer, resident of an impacted community, or recreationist. You do not need to have property directly impacted by the project in order to intervene. For more information about motions to intervene, refer to the FERC website at <https://www.ferc.gov/resources/guides/how-to-intervene.asp>.

All timely, unopposed motions to intervene are automatically granted by operation of Rule 214(c)(1). Motions to intervene that are filed after the intervention deadline are untimely and may be denied. Any late-filed motion to intervene must show good cause for being late and must explain why the time limitation should be waived and provide justification by reference to factors set forth in Rule 214(d) of the Commission's Rules and Regulations. A person obtaining party status will be placed on the service list maintained by the Secretary of the Commission and will receive copies (paper or electronic) of all documents filed by the applicant and by all other parties.

### Comments

Any person wishing to comment on the project may do so. The Commission considers all comments received about the project in determining the appropriate action to be taken. To ensure that your comments are timely and properly recorded, please submit your comments on or before January 26, 2023. The filing of a comment alone will not serve to make the filer a party to the proceeding. To become a party, you must intervene in the proceeding.

### How To File Protests, Interventions, and Comments

There are two ways to submit protests, motions to intervene, and comments. In both instances, please reference the Project docket number CP23–29–000 in your submission:

(1) You may file your protest, motion to intervene, and comments by using the Commission's eFiling feature, which is located on the Commission's website ([www.ferc.gov](http://www.ferc.gov)) under the link to Documents and Filings. New eFiling users must first create an account by clicking on "eRegister." You will be asked to select the type of filing you are making; first select "General" and then select "Protest", "Intervention", or "Comment on a Filing" or<sup>7</sup>

(2) You can file a paper copy of your submission by mailing it to the address below. Your submission must reference the Project docket number CP23–29–000.

To mail via USPS, use the following address: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Washington, DC 20426

To mail via any other courier, use the following address: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, Maryland 20852

The Commission encourages electronic filing of submissions (option 1 above) and has eFiling staff available to assist you at (202) 502–8258 or [FercOnlineSupport@ferc.gov](mailto:FercOnlineSupport@ferc.gov).

Protests and motions to intervene must be served on the applicant either by mail at: Denise Adams, Director, Regulatory Affairs, ONEOK, Inc., 100 West Fifth Street, Tulsa, Oklahoma 74103, or email (with a link to the document) at: [regulatoryaffairs@oneok.com](mailto:regulatoryaffairs@oneok.com). Any subsequent

<sup>7</sup> Additionally, you may file your comments electronically by using the eComment feature, which is located on the Commission's website at [www.ferc.gov](http://www.ferc.gov) under the link to Documents and Filings. Using eComment is an easy method for interested persons to submit brief, text-only comments on a project.

submissions by an intervenor must be served on the applicant and all other parties to the proceeding. Contact information for parties can be downloaded from the service list at the eService link on FERC Online.

### Tracking the Proceeding

Throughout the proceeding, additional information about the project will be available from the Commission's Office of External Affairs, at (866) 208–FERC, or on the FERC website at [www.ferc.gov](http://www.ferc.gov) using the "eLibrary" link as described above. The eLibrary link also provides access to the texts of all formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription which allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. For more information and to register, go to [www.ferc.gov/docs-filing/esubscription.asp](http://www.ferc.gov/docs-filing/esubscription.asp).

Dated: January 5, 2023.

**Kimberly D. Bose,**  
Secretary.

[FR Doc. 2023–00351 Filed 1–10–23; 8:45 am]

BILLING CODE 6717–01–P

## DEPARTMENT OF ENERGY

### Federal Energy Regulatory Commission

#### Combined Notice of Filings

Take notice that the Commission has received the following Natural Gas Pipeline Rate and Refund Report filings:

#### Filings Instituting Proceedings

*Docket Numbers:* RP23–325–000.

*Applicants:* Gulf Run Transmission, LLC.

*Description:* § 4(d) Rate Filing: New NRA's—Paloma, Rockcliff, SW Energy and Chesapeake to be effective 1/1/2023.

*Filed Date:* 12/30/22.

*Accession Number:* 20221230–5152.

*Comment Date:* 5 p.m. ET 1/11/23.

*Docket Numbers:* RP23–326–000.

*Applicants:* Northern Natural Gas Company.

*Description:* § 4(d) Rate Filing: 20221230 Negotiated Rate to be effective 1/1/2023.

*Filed Date:* 12/30/22.

*Accession Number:* 20221230–5159.

*Comment Date:* 5 p.m. ET 1/11/23.

<sup>4</sup> 18 CFR 157.205(e).

<sup>5</sup> 18 CFR 385.214.

<sup>6</sup> 18 CFR 157.10.

- Docket Numbers:* RP23–327–000.  
*Applicants:* Transcontinental Gas Pipe Line Company, LLC.  
*Description:* § 4(d) Rate Filing: Negotiated Rates—Cherokee AGL—Replacement Shippers—Jan 2023 to be effective 1/1/2023.  
*Filed Date:* 12/30/22.  
*Accession Number:* 20221230–5171.  
*Comment Date:* 5 p.m. ET 1/11/23.  
*Docket Numbers:* RP23–328–000.  
*Applicants:* LA Storage, LLC.  
*Description:* § 4(d) Rate Filing: Filing of Negotiated Rate, Conforming IW Agreements 12.30.22 to be effective 1/1/2023.  
*Filed Date:* 12/30/22.  
*Accession Number:* 20221230–5186.  
*Comment Date:* 5 p.m. ET 1/11/23.  
*Docket Numbers:* RP23–329–000.  
*Applicants:* Southern Star Central Gas Pipeline, Inc.  
*Description:* § 4(d) Rate Filing: Vol. 2 Filing—Negotiated Rate Agreements—Scout Energy Group III and V to be effective 1/1/2023.  
*Filed Date:* 12/30/22.  
*Accession Number:* 20221230–5191.  
*Comment Date:* 5 p.m. ET 1/11/23.  
*Docket Numbers:* RP23–330–000.  
*Applicants:* Texas Eastern Transmission, LP.  
*Description:* § 4(d) Rate Filing: TETLP EPC FEB 2023 FILING to be effective 2/1/2023.  
*Filed Date:* 12/30/22.  
*Accession Number:* 20221230–5202.  
*Comment Date:* 5 p.m. ET 1/11/23.  
*Docket Numbers:* RP23–331–000.  
*Applicants:* North Baja Pipeline, LLC.  
*Description:* § 4(d) Rate Filing: Sempra LNG Capacity Release of Agreement No. 125165 to be effective 1/1/2023.  
*Filed Date:* 1/3/23.  
*Accession Number:* 20230103–5000.  
*Comment Date:* 5 p.m. ET 1/17/23.  
*Docket Numbers:* RP23–332–000.  
*Applicants:* Equitrans, L.P.  
*Description:* § 4(d) Rate Filing: Negotiated Rate Capacity Release Agreements—1/1/2023 to be effective 1/1/2023.  
*Filed Date:* 1/3/23.  
*Accession Number:* 20230103–5003.  
*Comment Date:* 5 p.m. ET 1/17/23.  
*Docket Numbers:* RP23–333–000.  
*Applicants:* Algonquin Gas Transmission, LLC.  
*Description:* § 4(d) Rate Filing: Negotiated Rates—Various Releases eff 1–1–23 to be effective 1/1/2023.  
*Filed Date:* 1/3/23.  
*Accession Number:* 20230103–5048.  
*Comment Date:* 5 p.m. ET 1/17/23.  
*Docket Numbers:* RP23–334–000.  
*Applicants:* Texas Eastern Transmission, LP.  
*Description:* § 4(d) Rate Filing: Negotiated Rates—Various Releases eff 1–1–23 to be effective 1/1/2023.  
*Filed Date:* 1/3/23.  
*Accession Number:* 20230103–5049.  
*Comment Date:* 5 p.m. ET 1/17/23.  
*Docket Numbers:* RP23–335–000.  
*Applicants:* Gulf South Pipeline Company, LLC.  
*Description:* § 4(d) Rate Filing: Cap Rel Neg Rate Agmt (Methanex 42805 to NextEra 55857) to be effective 1/1/2023.  
*Filed Date:* 1/3/23.  
*Accession Number:* 20230103–5050.  
*Comment Date:* 5 p.m. ET 1/17/23.  
*Docket Numbers:* RP23–336–000.  
*Applicants:* Gulf South Pipeline Company, LLC.  
*Description:* § 4(d) Rate Filing: Cap Rel Neg Rate Agmt (Osaka 46429 to Spotlight 55855, Texla 55858) to be effective 1/1/2023.  
*Filed Date:* 1/3/23.  
*Accession Number:* 20230103–5054.  
*Comment Date:* 5 p.m. ET 1/17/23.  
*Docket Numbers:* RP23–337–000.  
*Applicants:* Rover Pipeline LLC.  
*Description:* § 4(d) Rate Filing: Summary of Negotiated Rate Capacity Release Agreements on 1–3–23 to be effective 1/1/2023.  
*Filed Date:* 1/3/23.  
*Accession Number:* 20230103–5257.  
*Comment Date:* 5 p.m. ET 1/17/23.  
*Docket Numbers:* RP23–338–000.  
*Applicants:* NEXUS Gas Transmission, LLC.  
*Description:* § 4(d) Rate Filing: Negotiated Rates—Various Releases eff 1–1–23 to be effective 1/1/2023.  
*Filed Date:* 1/3/23.  
*Accession Number:* 20230103–5303.  
*Comment Date:* 5 p.m. ET 1/17/23.  
*Docket Numbers:* RP23–339–000.  
*Applicants:* Panhandle Eastern Pipe Line Company, LP.  
*Description:* § 4(d) Rate Filing: New Amended Negotiated Rate Agreement to be effective 11/1/2022.  
*Filed Date:* 1/3/23.  
*Accession Number:* 20230103–5343.  
*Comment Date:* 5 p.m. ET 1/17/23.  
*Docket Numbers:* RP23–340–000.  
*Applicants:* Texas Eastern Transmission, LP.  
*Description:* § 4(d) Rate Filing: Negotiated Rates—NextEra Energy K911746 & K911750 eff 1–1–23 to be effective 1/1/2023.  
*Filed Date:* 1/3/23.  
*Accession Number:* 20230103–5372.  
*Comment Date:* 5 p.m. ET 1/17/23.  
*Docket Numbers:* RP23–341–000.  
*Applicants:* Texas Eastern Transmission, LP.  
*Description:* § 4(d) Rate Filing: Negotiated Rates—Venture Global K911779 to be effective 1/1/2023.  
*Filed Date:* 1/3/23.  
*Accession Number:* 20230103–5401.  
*Comment Date:* 5 p.m. ET 1/17/23.  
*Docket Numbers:* RP23–342–000.  
*Applicants:* Maritimes & Northeast Pipeline, L.L.C.  
*Description:* § 4(d) Rate Filing: Negotiated Rates—Northern to Direct Energy 2777 eff 1–1–23 to be effective 1/1/2023.  
*Filed Date:* 1/3/23.  
*Accession Number:* 20230103–5418.  
*Comment Date:* 5 p.m. ET 1/17/23.  
*Docket Numbers:* RP23–343–000.  
*Applicants:* El Paso Natural Gas Company, L.L.C.  
*Description:* § 4(d) Rate Filing: Negotiated Rate Agmt Update (Conoco—Jan 5 23) to be effective 1/5/2023.  
*Filed Date:* 1/4/23.  
*Accession Number:* 20230104–5054.  
*Comment Date:* 5 p.m. ET 1/17/23.  
*Docket Numbers:* RP23–344–000.  
*Applicants:* Transcontinental Gas Pipe Line Company, LLC.  
*Description:* Compliance filing: Rate Schedule S–2 OFO Refund Report to be effective N/A.  
*Filed Date:* 1/5/23.  
*Accession Number:* 20230105–5000.  
*Comment Date:* 5 p.m. ET 1/17/23.  
*Docket Numbers:* RP23–345–000.  
*Applicants:* Gulf South Pipeline Company, LLC.  
*Description:* § 4(d) Rate Filing: Remove Expired Agreements eff 1–5–23 to be effective 1/5/2023.  
*Filed Date:* 1/5/23.  
*Accession Number:* 20230105–5014.  
*Comment Date:* 5 p.m. ET 1/17/23.
- Any person desiring to intervene or protest in any of the above proceedings must file in accordance with Rules 211 and 214 of the Commission's Regulations (18 CFR 385.211 and 385.214) on or before 5:00 p.m. Eastern time on the specified comment date. Protests may be considered, but intervention is necessary to become a party to the proceeding.
- The filings are accessible in the Commission's eLibrary system (<https://elibrary.ferc.gov/idmws/search/fercgensearch.asp>) by querying the docket number.
- eFiling is encouraged. More detailed information relating to filing requirements, interventions, protests, service, and qualifying facilities filings can be found at: <http://www.ferc.gov/docs-filing/efiling/filing-req.pdf>. For other information, call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.
- Dated: January 5, 2023.
- Debbie-Anne A. Reese,**  
Deputy Secretary.
- [FR Doc. 2023–00365 Filed 1–10–23; 8:45 am]
- BILLING CODE 6717–01–P**



**DEPARTMENT OF ENERGY****Federal Energy Regulatory Commission**

[Docket No. AD21–15–000]

**Joint Federal-State Task Force on Electric Transmission; Notice Announcing Meeting and Inviting Agenda Topics**

On June 17, 2021, the Commission established a Joint Federal-State Task Force on Electric Transmission (Task Force) to formally explore transmission-related topics outlined in the Commission's order.<sup>1</sup> The Commission stated that the Task Force will convene for multiple formal meetings annually, which will be open to the public for listening and observing and on the record.<sup>2</sup> The next public meeting of the Task Force will be held on Wednesday, February 15, 2023, from approximately 1:30 p.m. to 4:00 p.m. Eastern time. The meeting will be held at the Renaissance Washington Downtown Hotel in Washington, DC. Commissioners may attend and participate in this meeting.

The meeting will be open to the public for listening and observing and on the record. There is no fee for attendance and registration is not required. The public may attend in person or via Webcast.<sup>3</sup> This conference will be transcribed. Transcripts will be available for a fee from Ace Reporting, 202–347–3700.

Commission conferences are accessible under section 508 of the Rehabilitation Act of 1973. For accessibility accommodations, please send an email to [accessibility@ferc.gov](mailto:accessibility@ferc.gov) or call toll free 1–866–208–3372 (voice) or 202–208–8659 (TTY), or send a fax to 202–208–2106 with the required accommodations.

As explained in the Establishing Order, the Commission will issue agendas for each meeting of the Task Force, after consulting with all Task Force members and considering suggestions from state commissions.<sup>4</sup> The Establishing Order set forth a broad array of transmission-related topics that the Task Force has the authority to examine and will focus on topics related to planning and paying for transmission, including transmission to facilitate generator interconnection, that provides benefits from a federal and state

perspective.<sup>5</sup> All interested persons, including all state commissions, are hereby invited to file comments in this docket on agenda topics for the next public meeting of the Task Force by January 20, 2023. The Task Force members will consider the suggested agenda topics in developing the agenda for the next public meeting. The Commission will issue the agenda no later than February 1, 2023, for the public meeting to be held on February 15, 2023.

Comments may be filed electronically via the internet.<sup>6</sup> Instructions are available on the Commission's website, <https://www.ferc.gov/ferc-online/overview>. For assistance, please contact FERC Online Support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov) or toll free at 1–866–208–3676, or for TTY, (202) 502–8659. Although the Commission strongly encourages electronic filing, documents may also be paper-filed. To paper-file, submissions sent via the U.S. Postal Service must be addressed to: Federal Energy Regulatory Commission, Office of the Secretary, 888 First Street NE, Washington, DC 20426. Submissions sent via any other carrier must be addressed to: Federal Energy Regulatory Commission, Office of the Secretary, 12225 Wilkins Avenue, Rockville, Maryland 20852.

More information about the Task Force, including frequently asked questions, is available here: <https://www.ferc.gov/TFSOET>. For more information about this meeting, please contact: Gretchen Kershaw, 202–502–8213, [gretchen.kershaw@ferc.gov](mailto:gretchen.kershaw@ferc.gov); or Jennifer Murphy, 202–898–1350, [jmurphy@naruc.org](mailto:jmurphy@naruc.org). For information related to logistics, please contact Rob Thormeyer, 202–502–8694, [robert.thormeyer@ferc.gov](mailto:robert.thormeyer@ferc.gov).

Dated: January 5, 2023.

**Kimberly D. Bose,**  
Secretary.

[FR Doc. 2023–00350 Filed 1–10–23; 8:45 am]

**BILLING CODE 6717–01–P****DEPARTMENT OF ENERGY****Federal Energy Regulatory Commission**

[Docket No. NJ23–8–000]

**Oncor Electric Delivery Company LLC; Notice of Filing**

Take notice that on January 4, 2023, Oncor Electric Delivery Company LLC submits tariff filing; Oncor Transmission Service To, From and

<sup>5</sup> *Id.* P 6.<sup>6</sup> See 18 CFR 385.2001(a)(1)(iii) (2021).

Over Certain Interconnections Tariff Rate Changes, to be effective December 20, 2022.

Any person desiring to intervene or to protest this filing must file in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 385.214). Protests will be considered by the Commission in determining the appropriate action to be taken but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a notice of intervention or motion to intervene, as appropriate. Such notices, motions, or protests must be filed on or before the comment date. On or before the comment date, it is not necessary to serve motions to intervene or protests on persons other than the Applicant.

In addition to publishing the full text of this document in the **Federal Register**, the Commission provides all interested persons an opportunity to view and/or print the contents of this document via the internet through the Commission's Home Page (<http://www.ferc.gov>) using the "eLibrary" link. Enter the docket number excluding the last three digits in the docket number field to access the document. At this time, the Commission has suspended access to the Commission's Public Reference Room, due to the proclamation declaring a National Emergency concerning the Novel Coronavirus Disease (COVID–19), issued by the President on March 13, 2020. For assistance, contact the Federal Energy Regulatory Commission at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov) or call toll-free, (886) 208–3676 or TTY, (202) 502–8659.

The Commission strongly encourages electronic filings of comments, protests and interventions in lieu of paper using the "eFiling" link at <http://www.ferc.gov>. Persons unable to file electronically may mail similar pleadings to the Federal Energy Regulatory Commission, 888 First Street NE, Washington, DC 20426. Hand delivered submissions in docketed proceedings should be delivered to Health and Human Services, 12225 Wilkins Avenue, Rockville, Maryland 20852.

*Comment Date:* 5:00 p.m. Eastern Time on January 25, 2023.

Dated: January 5, 2023.

**Debbie-Anne A. Reese,**  
Deputy Secretary.

[FR Doc. 2023–00367 Filed 1–10–23; 8:45 am]

**BILLING CODE 6717–01–P**<sup>1</sup> *Joint Fed.-State Task Force on Elec. Transmission*, 175 FERC ¶ 61,224 (2021) (Establishing Order).<sup>2</sup> *Id.* P 4.<sup>3</sup> A link to the Webcast will be available here on the day of the event: <https://www.ferc.gov/TFSOET>.<sup>4</sup> Establishing Order, 175 FERC ¶ 61,224 at PP 4, 7.

**EXPORT-IMPORT BANK****Sunshine Act Meetings**

Notice of an Open Meeting of the Board of Directors of the Export-Import Bank of the United States.

**TIME AND DATE:** Thursday, January 19, 2023, at 9:30 a.m.

**PLACE:** The meeting will be held via teleconference.

**STATUS:** The meeting will be open to public observation.

**MATTERS TO BE CONSIDERED:**

1. OECD Local Cost Increase
2. Policy Proposal for EXIM Financing 5G Transactions

**CONTACT PERSON FOR MORE INFORMATION:**

Joyce B. Stone (202–257–4086). Members of the public who wish to attend the meeting may do so via teleconference and must register using the link below by noon Wednesday January 18, 2023. After completing the registration, individuals will receive a confirmation email containing information about joining the webinar. [https://teams.microsoft.com/registration/PAFTuZHHMk2Zb1GDkIVFJw,pHLqbjVTrkuy\\_9KepKN6dQ,MFtnLzltSEGI6EQECdl5iQ,08qJl3kYJk2L\\_ABN4wY\\_ug,vZM4El7UYUeG\\_MAW1OfxbQ,ty6uKl1vfUiu6R\\_zQ61RpA?mode=read&tenantId=b953013c-c791-4d32-996f-518390854527](https://teams.microsoft.com/registration/PAFTuZHHMk2Zb1GDkIVFJw,pHLqbjVTrkuy_9KepKN6dQ,MFtnLzltSEGI6EQECdl5iQ,08qJl3kYJk2L_ABN4wY_ug,vZM4El7UYUeG_MAW1OfxbQ,ty6uKl1vfUiu6R_zQ61RpA?mode=read&tenantId=b953013c-c791-4d32-996f-518390854527).

**Joyce B. Stone,**

*Assistant Corporate Secretary.*

[FR Doc. 2023–00482 Filed 1–9–23; 11:15 am]

**BILLING CODE 6690–01–P**

**FEDERAL RESERVE SYSTEM****Change in Bank Control Notices; Acquisitions of Shares of a Bank or Bank Holding Company**

The notificants listed below have applied under the Change in Bank Control Act (Act) (12 U.S.C. 1817(j)) and 225.41 of the Board's Regulation Y (12 CFR 225.41) to acquire shares of a bank or bank holding company. The factors that are considered in acting on the applications are set forth in paragraph 7 of the Act (12 U.S.C. 1817(j)(7)).

The public portions of the applications listed below, as well as other related filings required by the Board, if any, are available for immediate inspection at the Federal Reserve Bank(s) indicated below and at the offices of the Board of Governors. This information may also be obtained on an expedited basis, upon request, by contacting the appropriate Federal

Reserve Bank and from the Board's Freedom of Information Office at <https://www.federalreserve.gov/foia/request.htm>. Interested persons may express their views in writing on the standards enumerated in paragraph 7 of the Act.

Comments regarding each of these applications must be received at the Reserve Bank indicated or the offices of the Board of Governors, Ann E. Misback, Secretary of the Board, 20th Street and Constitution Avenue NW, Washington DC 20551–0001, not later than January 26, 2023.

*A. Federal Reserve Bank of Minneapolis* (Stephanie Weber, Assistant Vice President), 90 Hennepin Avenue, Minneapolis, Minnesota 55480–0291. Comments can also be sent electronically to [MA@mpls.frb.org](mailto:MA@mpls.frb.org):

1. *The Gasterland Family GST Trust, La Crosse, Wisconsin; Dirk R. Gasterland, individually and as trustee, Chaska, Minnesota; Jennifer VandenBrink, individually and as trustee, Chanhassen, Minnesota; Lloyd Michael Gilbertson, Grand Rapids, Minnesota; Olaf Gilbertson, Jordan, Minnesota; Gretchen Gasterland-Gustafsson, Grace Gasterland, and a certain minor child, all of St. Paul, Minnesota; Natalie Gasterland, Chicago, Illinois; Emma Gasterland-Gustafsson, Brooklyn, New York; and Lilly Gasterland-Gustafsson, New York, New York;* to join the Gasterland Control Group, a group acting in concert, to retain voting shares of Coulee Bancshares, Inc., and thereby indirectly retain voting shares of Coulee Bank, both of La Crosse, Wisconsin.

*B. Federal Reserve Bank of Kansas City* (Jeffrey Imgarten, Assistant Vice President) 1 Memorial Drive, Kansas City, Missouri 64198–0001:

1. *Johannes Wilhelmus Antonius Zuurbier, Amsterdam, Netherlands;* to acquire voting shares of Steinauer Bancorp, and thereby indirectly acquire voting shares of Bank of Steinauer, both of Steinauer, Nebraska.

Board of Governors of the Federal Reserve System.

**Michele Taylor Fennell,**

*Deputy Associate Secretary of the Board.*

[FR Doc. 2023–00404 Filed 1–10–23; 8:45 am]

**BILLING CODE 6210–01–P**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES****Centers for Disease Control and Prevention****Notice of Award of a Single-Source Cooperative Agreement To Fund the Pan American Health Organization (PAHO): Building Capacity and Networks To Address Emerging Infectious Diseases in the Americas**

**AGENCY:** Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS).

**ACTION:** Notice.

**SUMMARY:** The Centers for Disease Control and Prevention (CDC), located within the Department of Health and Human Services (HHS), announces the award of approximately \$4,000,000, with an expected total funding of approximately \$20,000,000 over a 5-year period, to the Pan American Health Organization (PAHO). The award will continue support to PAHO in developing and implementing coordinated national and regional public health programs in the Americas that are consistent with the World Health Organization's International Health Regulations (IHR) strategies and the CDC global health priorities for improving infectious disease surveillance and response, building public health infrastructure and systems, sharing knowledge, tools and other resources in support of applied epidemiology, and developing improved prevention and control strategies for infectious disease, such as arboviruses, coronaviruses, chikungunya, dengue, yellow fever, Zika, HIV, poxviruses, foodborne, antimicrobial resistant and healthcare facility-acquired infectious diseases.

**DATES:** The period for this award will be 09/03/2023 through 09/02/2028.

**FOR FURTHER INFORMATION CONTACT:**

Amanda (Amy) Pullman, National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), Centers for Disease Control and Prevention, 1600 Clifton Road NE, MS H24–11, Atlanta, GA 30033, Telephone: 404–718–5770 | TTY: (888) 232–6348, Email: [EPRB@cdc.gov](mailto:EPRB@cdc.gov).

**SUPPLEMENTARY INFORMATION:** The single-source award will assist Pan American Health Organization (PAHO) in the development and implementation of coordinated plans and networks that enable national governments and regional authorities in the Americas to implement IHR and better address infectious diseases, particularly emerging infections. Measurable

outcomes of the program will be in alignment with CDC/NCEZID strategies to strengthen and enhance the national capacity of countries in the Americas to detect, verify, assess, and respond to outbreaks and other public health emergencies of national and international concern (PHEICs).

The PAHO is in a unique position to conduct this work, as it was established in 1902 by President Theodore Roosevelt and more than three decades before the United Nations and the World Health Organization (WHO) as an international public health agency that works with the countries of the Americas to improve the health and quality of life of their populations. PAHO is the Regional Office for the Americas of the WHO as part of the United Nations system. PAHO's formal treaty relationships with all the ministries of health in the Americas make it the only organization that can carry out fully the proposed activities. WHO and its Regional Offices (including PAHO) are at the apex of global public health organizations and thus have an exclusive status as the United States government's key partners for global public health. The International Health Regulations (IHR 2005) is an international agreement that requires WHO Member States to prevent and respond to acute public health risks that have the potential to cross borders and threaten people worldwide.

#### Summary of the Award

*Recipient:* Pan American Health Organization (PAHO).

*Purpose of the Award:* The purpose of this award is to continue support to PAHO in developing and implementing coordinated national and regional public health programs in the Americas that are consistent with the World Health Organization's International Health Regulations (IHR) strategies and the CDC global health priorities, and better address infectious diseases, particularly emerging infections. Strategies and activities include strengthening and enhancing the national capacity of countries in the Americas to detect, verify, assess, and respond to outbreaks, including arboviruses, coronaviruses, chikungunya, dengue, yellow fever, Zika, HIV, poxviruses, foodborne, antimicrobial resistant and healthcare facility-acquired infectious diseases, and other public health emergencies of national and international concern (PHEICs).

*Amount of Award:* \$4,000,000 in Federal Fiscal Year (FFY) 2023 funds, with a total estimated \$20,000,000 for

the 5-year period of performance, subject to availability of funds.

*Authority:* This program is authorized under sections 301 and 307 of the Public Health Service Act, as amended [42 U.S.C. 241 and 2421].

*Period of Performance:* 09/03/2023 through 09/02/2028.

Dated: January 6, 2023.

**Terrance Perry,**

*Chief Grants Management Officer, Centers for Disease Control and Prevention.*

[FR Doc. 2023-00384 Filed 1-10-23; 8:45 am]

**BILLING CODE 4163-18-P**

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### Centers for Disease Control and Prevention

[60Day-23-1294; Docket No. CDC-2022-0143]

#### Proposed Data Collection Submitted for Public Comment and Recommendations

**AGENCY:** Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS).

**ACTION:** Notice with comment period.

**SUMMARY:** The Centers for Disease Control and Prevention (CDC), as part of its continuing effort to reduce public burden and maximize the utility of government information, invites the general public and other federal agencies the opportunity to comment on a continuing information collection, as required by the Paperwork Reduction Act of 1995. This notice invites comment on a proposed information collection project titled Maternal Mortality Review Information Application (MMRIA). MMRIA is a standardized data collection system that allows Maternal Mortality Review Committees (MMRCs) to abstract relevant data from a variety of sources, document committee decisions, and analyze data to better understand the contributing factors and preventability of pregnancy-related deaths in order to develop recommendations for prevention.

**DATES:** CDC must receive written comments on or before March 13, 2023.

**ADDRESSES:** You may submit comments, identified by Docket No. CDC-2022-0143 by either of the following methods:

- *Federal eRulemaking Portal:* [www.regulations.gov](http://www.regulations.gov). Follow the instructions for submitting comments.
- *Mail:* Jeffrey M. Zirger, Information Collection Review Office, Centers for Disease Control and Prevention, 1600

Clifton Road NE, MS H21-8, Atlanta, Georgia 30329.

*Instructions:* All submissions received must include the agency name and Docket Number. CDC will post, without change, all relevant comments to [www.regulations.gov](http://www.regulations.gov).

*Please note:* Submit all comments through the Federal eRulemaking portal ([www.regulations.gov](http://www.regulations.gov)) or by U.S. mail to the address listed above.

**FOR FURTHER INFORMATION CONTACT:** To request more information on the proposed project or to obtain a copy of the information collection plan and instruments, contact Jeffrey M. Zirger, Information Collection Review Office, Centers for Disease Control and Prevention, 1600 Clifton Road NE, MS H21-8, Atlanta, Georgia 30329; Telephone: 404-639-7118; Email: [omb@cdc.gov](mailto:omb@cdc.gov).

**SUPPLEMENTARY INFORMATION:** Under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501-3520), federal agencies must obtain approval from the Office of Management and Budget (OMB) for each collection of information they conduct or sponsor. In addition, the PRA also requires federal agencies to provide a 60-day notice in the **Federal Register** concerning each proposed collection of information, including each new proposed collection, each proposed extension of existing collection of information, and each reinstatement of previously approved information collection before submitting the collection to the OMB for approval. To comply with this requirement, we are publishing this notice of a proposed data collection as described below.

The OMB is particularly interested in comments that will help:

1. Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

2. Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

3. Enhance the quality, utility, and clarity of the information to be collected;

4. Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submissions of responses; and

5. Assess information collection costs.

## Proposed Project

The Maternal Mortality Review Information Application (MMRIA) (OMB Control No. 0920–1294, Exp. 04/30/2023)—Revision—National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP), Centers for Disease Control and Prevention (CDC).

### Background and Brief Description

The Centers for Disease Control and Prevention (CDC) seeks a Revision to continue to collect information through the Maternal Mortality Review Information Application (MMRIA) for three more years. MMRIA is a standardized data collection system that allows Maternal Mortality Review Committees (MMRCs) across the country to abstract relevant data (clinical and non-clinical) from a variety of sources, document committee decisions, and analyze data in order to better understand the contributing factors and preventability of pregnancy-related deaths and thus to develop recommendations for prevention.

Pregnancy-related deaths are defined as a death as a result of pregnancy or delivery complications, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy. Considerable racial disparities exist, with persons who are American Indian/Alaska Native and Black persons two to three times more likely to die from pregnancy-related complications than persons who are White. Findings from analyses of aggregated MMRC data indicate that about four out of five pregnancy-related deaths are preventable.

Maternal Mortality Review is a process by which a multidisciplinary committee at the jurisdiction level identifies and reviews cases of death that occur during or within one year of end of pregnancy. Members of MMRCs typically represent public health, obstetrics and gynecology, maternal-fetal medicine, nursing, midwifery, forensic pathology, mental and behavioral health, community-based organizations, and other relevant partners. Through a partnership among the MMRC, state vital records office, and epidemiologists, deaths among females of reproductive age are examined to determine if they occurred during pregnancy or within one year of the end of pregnancy (*i.e.*, pregnancy-

associated deaths). Through this process, potential cases of pregnancy-related deaths (*i.e.*, death from any cause related to or aggravated by pregnancy or its management) are then identified. Review committees access multiple sources of clinical and non-clinical information to understand the circumstances surrounding a death in order to determine pregnancy-relatedness and develop recommendations for action to prevent similar deaths in the future.

MMRIA is a standardized data collection system designed to support MMRC processes. Data are abstracted and entered into MMRIA from various sources, including death records, autopsy reports, birth and fetal death records, prenatal care records, emergency department visit records, hospitalization records, records from other medical office visits, medical transport records, social and environmental profiles, mental health profiles, and informant interviews. Case narratives for committee reviews are developed from the abstracted data entered into MMRIA to facilitate committee review, and committee decisions based on their review are also be entered into MMRIA. The data collected in MMRIA is used to facilitate an understanding of the drivers of maternal mortality and complications of pregnancy and associated disparities; determine what interventions at patient, provider, facility, system, and community levels will have the most impact; and implement data driven recommendations.

The burden estimates presented here are applicable to the 40 jurisdictions with funding support through the cooperative agreements Preventing Maternal Deaths: Supporting Maternal Mortality Review Committees (CDC–RFA–DP19–1908) and Preventing Maternal Mortality: Supporting Maternal Mortality Review Committees (CDC–RFA–DP22–2211) which includes 39 direct awardees and one sub-awardee. These jurisdictions are required to compile a defined set of information about pregnancy-related deaths into MMRIA. It is estimated that information will be collected for a total of 1,983 pregnancy-associated deaths on average, annually, among the 40 jurisdictions with funding support through CDC–RFA–DP19–1908 and CDC–RFA–DP22–2211. For 23 jurisdictions, it is estimated that on

average, 15 hours of data abstraction are required for each death entered into MMRIA. The other 17 jurisdictions are able to participate in a process to reduce burden by which CDC uploads vital records information into MMRIA rather than jurisdiction staff manually abstracting vital records. For these 17 jurisdictions, the estimated average is 14 hours of abstraction for each death entered into MMRIA. For all jurisdictions with funding support through CDC–RFA–DP19–1908 and CDC–RFA–DP22–2211, an additional 24 minutes on average is needed to enter the committee decisions into MMRIA.

There are four changes that result in this request for revision, with the first three having an impact on the estimated burden for this revision. First, through additional congressional appropriations, an additional 15 jurisdictions are now funding recipients. This represents an increase from 24 to 39 funding recipients. There is a total of 40 respondents, because one funding recipient provides a subaward to an additional respondent. Second, CDC estimates a higher number of pregnancy-associated deaths due to utilizing data from the Pregnancy Mortality Surveillance System (PMSS) rather than CDC WONDER for these estimates. PMSS estimates of pregnancy-associated deaths are more accurate due to more comprehensive and complete identification of these deaths through multiple case identification methods. Third, CDC has been working with the National Association for Public Health Statistics and Information Systems on an initiative that enables CDC to transfer vital records data associated with CDC identified pregnancy-associated deaths directly into a jurisdiction's instance of MMRIA, reducing manual data entry burden for the 17 respondents participating in the initiative. Fourth, to address user identified needs and increase data use for analysis by jurisdictions, a total of 60 new optional fields were added to MMRIA, three fields removed, and two fields combined. None of the added fields are required fields.

These changes resulted in an overall increase to the estimated burden from the previous approval. CDC requests OMB approval for an estimated 29,950 annual burden hours. There is no cost to respondents other than their time to participate.

ESTIMATED ANNUALIZED BURDEN HOURS

Type of respondent	Form name	Number of respondents	Number of responses per respondent	Average burden per response (in hr)	Total burden (in hr)
Jurisdictions with funding support through CDC-RFA-DP19-1908 and CDC-RFA-DP22-2211 who manually abstract all data into MMRIA.	MMRIA data abstraction.	23	50	15	17,250
Jurisdictions with funding support through CDC-RFA-DP19-1908 and CDC-RFA-DP22-2211 for which CDC is uploading vital records into MMRIA and jurisdiction staff abstract remaining data manually into MMRIA.	MMRIA data abstraction.	17	50	14	11,900
All jurisdictions with funding support through CDC-RFA-DP19-1908 and CDC-RFA-DP22-2211.	MMRIA committee decisions form.	40	50	0.4	800
Total .....	.....	.....	.....	.....	29,950

**Jeffrey M. Zirger,**

*Lead, Information Collection Review Office, Office of Scientific Integrity, Office of Science, Centers for Disease Control and Prevention.*

[FR Doc. 2023-00334 Filed 1-10-23; 8:45 am]

**BILLING CODE 4163-18-P**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Centers for Disease Control and Prevention**

**Notice of Award of a Single-Source Cooperative Agreement To Fund the United Nations Children’s Fund**

**AGENCY:** Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS).

**ACTION:** Notice.

**SUMMARY:** The Centers for Disease Control and Prevention (CDC), located within the Department of Health and Human Services (HHS), announces the award of approximately \$36,000,000 for Year 1 funding to the United Nations Children’s Fund (UNICEF). The award will provide support and vaccines for supplemental immunization activities (SIAs) as well as support towards strengthening of routine immunization delivery systems and capacities in developing countries to achieve global targets for vaccine-preventable disease (VPD) eradication, elimination, and reduction. Funding amounts for years 2–5 will be set at continuation.

**DATES:** The period for this award will be 7/1/2023 through 6/30/2028.

**FOR FURTHER INFORMATION CONTACT:** Mary A. Mulholland, Center for Global Health, Global Immunization Division, Centers for Disease Control and Prevention, 1600 Clifton Rd. NE, Atlanta, GA 30333, Telephone: 404-553-7371, Email: [mmulholland@cdc.gov](mailto:mmulholland@cdc.gov).

**SUPPLEMENTARY INFORMATION:** The single-source award will support UNICEF in collaboration with partners to sustain and strengthen global, regional and national immunization program capacity needed to achieve the globally agreed-upon goals of the Immunization Agenda 2030 (IA2030), including polio eradication, elimination targets for measles, rubella and neonatal tetanus, and national and subnational vaccination targets; achieve the 2030 Sustainable Development Goal (SDG) to end vaccine-preventable deaths among children under 5 years of age; reduce chronic disease and cancer deaths from VPDs; and prevent, detect and respond to VPD outbreaks.

UNICEF is in a unique position to conduct this work, as it has a unique role in the global immunization partnership as the world’s largest purchaser of childhood vaccines and has the primary responsibility for providing countries with access to high-quality, affordable vaccines through their procurement systems and distribution networks. UNICEF has additional roles, including a global mandate to lead on social mobilization, community engagement, and other health communication activities. This agreement will expand on collaborative work to detect and respond to vaccine hesitance and threats to resilience of demand for vaccines that contribute to the gap between current global achievements and global targets.

**Summary of the Award**

*Recipient:* United Nations Children’s Fund (UNICEF).

*Purpose of the Award:* The purpose of this award is to support UNICEF’s efforts to support polio eradication, maternal and neonatal tetanus elimination, and regional measles and rubella elimination; planning and implementation of, and demand for, supplemental immunization campaigns;

and strengthening of immunization systems and capacity in developing countries, in line with CDC’s Global Immunization Strategic Framework (GISF.)

*Amount of Award:* The approximate year 1 funding amount will be \$36,000,000 in Federal Fiscal Year (FYY) 2023 funds, subject to the availability of funds. Funding amounts for years 2–5 will be set at continuation.

*Authority:* This program is authorized under Section 307 of the PHS Act (42 U.S.C. 242); section 317(k)(1) and (2) of the PHS Act (42 U.S.C. 247b(k)(1) and (2)).

*Period of Performance:* 7/1/2023 through 6/30/2028.

Dated: January 6, 2023.

**Terrance Perry,**

*Chief Grants Management Officer, Centers for Disease Control and Prevention.*

[FR Doc. 2023-00387 Filed 1-10-23; 8:45 am]

**BILLING CODE 4163-18-P**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Centers for Disease Control and Prevention**

**Board of Scientific Counselors, National Center for Health Statistics**

**AGENCY:** Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS).

**ACTION:** Notice of meeting.

**SUMMARY:** In accordance with the Federal Advisory Committee Act, the Centers for Disease Control and Prevention (CDC) announces the following meeting for the Board of Scientific Counselors, National Center for Health Statistics (BSC, NCHS). This meeting is open to the public. Time will be available for public comment.

**DATES:** The meeting will be held on February 15, 2023, from 11:00 a.m. to 4:30 p.m., EST.

**ADDRESSES:** Instructions to access the live meeting broadcast will be posted here: [https://www.cdc.gov/nchs/about/bsc/bsc\\_meetings.htm](https://www.cdc.gov/nchs/about/bsc/bsc_meetings.htm).

**FOR FURTHER INFORMATION CONTACT:** Rebecca Hines, M.H.S., Designated Federal Officer, Board of Scientific Counselors, National Center for Health Statistics, Centers for Disease Control and Prevention, 3311 Toledo Road, Mailstop P-08, Hyattsville, Maryland 20782; Telephone (301) 458-4715; Email: [RSHines@cdc.gov](mailto:RSHines@cdc.gov).

**SUPPLEMENTARY INFORMATION:**

*Purpose:* The Board of Scientific Counselors, National Center for Health Statistics (BSC, NCHS) is charged with providing advice and making recommendations to the Secretary, Department of Health and Human Services; the Director, Centers for Disease Control and Prevention (CDC); and the Director, National Center for Health Statistics, regarding the scientific and technical program goals and objectives, strategies, and priorities of NCHS.

*Matters to be Considered:* The meeting agenda will include a Center update from the NCHS Director; an update on CDC's Data Modernization Initiative; program updates from NCHS Division Directors; and time for Board discussion regarding current issues and topics. The Board will reserve time for public comment at the end of the day. Meeting times and agenda topics are subject to change as priorities dictate.

*Meeting Information:* Please visit the BSC, NCHS website for details: [https://www.cdc.gov/nchs/about/bsc/bsc\\_meetings.htm](https://www.cdc.gov/nchs/about/bsc/bsc_meetings.htm). Further information and the meeting agenda will be available on the BSC website, including any agenda updates and the instructions for accessing the live meeting broadcast.

The Director, Strategic Business Initiatives Unit, Office of the Chief Operating Officer, Centers for Disease Control and Prevention, has been delegated the authority to sign **Federal Register** notices pertaining to announcements of meetings and other committee management activities, for both the Centers for Disease Control and Prevention and the Agency for Toxic Substances and Disease Registry.

**Kalwant Smagh,**

*Director, Strategic Business Initiatives Unit, Office of the Chief Operating Officer, Centers for Disease Control and Prevention.*

[FR Doc. 2023-00407 Filed 1-10-23; 8:45 am]

**BILLING CODE 4163-19-P**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Centers for Disease Control and Prevention**

**Notice of Closed Meeting**

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended, notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended, and the Determination of the Director, Strategic Business Initiatives Unit, Office of the Chief Operating Officer, CDC, pursuant to Public Law 92-463. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

*Name of Committee:* Disease, Disability, and Injury Prevention and Control Special Emphasis Panel (SEP)—RFA-CE23-003: Grants to Support New Investigators in Conducting Research Related to Preventing Interpersonal Violence Impacting Children and Youth.

*Date:* February 28–March 1, 2023.

*Time:* 8:30 a.m.–5:30 p.m., EST.

*Place:* Videoconference.

*Agenda:* To review and evaluate grant applications.

*For Further Information Contact:* Carlisha Gentles, PharmD, BCPS, CDCES, Scientific Review Officer, National Center for Injury Prevention and Control, CDC, 4770 Buford Highway NE, Mailstop F-63, Atlanta, Georgia 30341, Telephone: (770) 488-1504, Email: [CGentles@cdc.gov](mailto:CGentles@cdc.gov).

The Director, Strategic Business Initiatives Unit, Office of the Chief Operating Officer, Centers for Disease Control and Prevention, has been delegated the authority to sign **Federal Register** notices pertaining to announcements of meetings and other committee management activities, for both the Centers for Disease Control and Prevention and the Agency for Toxic Substances and Disease Registry.

**Kalwant Smagh,**

*Director, Strategic Business Initiatives Unit, Office of the Chief Operating Officer, Centers for Disease Control and Prevention.*

[FR Doc. 2023-00241 Filed 1-10-23; 8:45 am]

**BILLING CODE 4163-18-P**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Centers for Disease Control and Prevention**

[Docket No. CDC-2023-0001]

**Advisory Committee to the Director, Centers for Disease Control and Prevention**

**AGENCY:** Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS).

**ACTION:** Notice of meeting and request for comment.

**SUMMARY:** In accordance with the Federal Advisory Committee Act, the CDC announces the following meeting for the Advisory Committee to the Director, Centers for Disease Control and Prevention (ACD, CDC). This meeting is open to the public. The meeting will be webcast live via the World Wide Web.

**DATES:** The meeting will be held on February 7, 2023, from 10 a.m. to 3:30 p.m., EST (times subject to change). The public may submit written comments on or before January 27, 2023.

**ADDRESSES:** Information for accessing the webcast will be available at <https://www.cdc.gov/about/advisory-committee-director/>.

*Written comments:* You may submit comments, identified by Docket No. CDC-2023-0001, by any of the following methods. Do not submit comments for the docket by email. CDC does not accept comments for the docket by email.

- *Federal eRulemaking Portal:* <https://www.regulations.gov>. Follow the instructions for submitting comments.

- *Mail:* Kerry Caudwell, DPA, Centers for Disease Control and Prevention, 1600 Clifton Road NE, MS H21-10, Atlanta, Georgia 30329-4027. Attn: Docket number CDC-2023-0001.

*Instructions:* All submissions received must include the Agency name and Docket Number. All relevant comments received in conformance with the <https://www.regulations.gov> suitability policy will be posted without change to <https://www.regulations.gov>, including any personal information provided. For access to the docket to read background documents or comments received, go to <https://www.regulations.gov>. Written public comments submitted up to 72 hours prior to the ACD meeting will be provided to ACD members before the meeting. Written comments received in advance of the meeting will be included in the official record of the meeting.

**FOR FURTHER INFORMATION CONTACT:** Kerry Caudwell, DPA, Office of the

Chief of Staff, Centers for Disease Control and Prevention, 1600 Clifton Road NE, MS H21-10, Atlanta, Georgia 30329-4027, Telephone: (404) 639-0390; Email Address: [ACDirector@cdc.gov](mailto:ACDirector@cdc.gov).

#### SUPPLEMENTARY INFORMATION:

*Purpose:* The Advisory Committee to the Director (ACD), CDC, shall advise the Secretary, HHS, and the Director, CDC, on policy and broad strategies that will enable CDC to fulfill its mission of protecting health through health promotion, prevention, and preparedness. The committee recommends ways to prioritize CDC's activities, improve results, and address health disparities. It also provides guidance to help CDC work more effectively with its various private and public sector constituents to make health protection a practical reality.

*Matters To Be Considered:* The agenda will include discussions on CDC's current work and priorities as they relate to health equity and data and surveillance recommendations to the Department of Health and Human Services and CDC Director. The agenda also includes a laboratory workgroup update with recommended action steps to the full ACD Committee, along with an update on the public health infrastructure grant. Agenda items are subject to change as priorities dictate.

#### Public Participation

Interested persons or organizations are invited to participate by submitting written views, recommendations, and data. Please note that comments received, including attachments and other supporting materials, are part of the public record and are subject to public disclosure. Comments will be posted on <https://www.regulations.gov>. Therefore, do not include any information in your comment or supporting materials that you consider confidential or inappropriate for public disclosure. If you include your name, contact information, or other information that identifies you in the body of your comments, that information will be on public display. CDC will review all submissions and may choose to redact, or withhold, submissions containing private or proprietary information such as Social Security numbers, medical information, inappropriate language, or duplicate/near duplicate examples of a mass-mail campaign. CDC will carefully consider all comments submitted into the docket.

The Director, Strategic Business Initiatives Unit, Office of the Chief Operating Officer, Centers for Disease Control and Prevention, has been

delegated the authority to sign **Federal Register** notices pertaining to announcements of meetings and other committee management activities, for both the Centers for Disease Control and Prevention and the Agency for Toxic Substances and Disease Registry.

#### Kalwant Smagh,

*Director, Strategic Business Initiatives Unit, Office of the Chief Operating Officer, Centers for Disease Control and Prevention.*

[FR Doc. 2023-00408 Filed 1-10-23; 8:45 am]

BILLING CODE 4163-18-P

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### Centers for Disease Control and Prevention

#### Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended, notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended, and the Determination of the Director, Strategic Business Initiatives Unit, Office of the Chief Operating Officer, CDC, pursuant to Public Law 92-463. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

*Name of Committee:* Disease, Disability, and Injury Prevention and Control Special Emphasis Panel (SEP)—RFA-IP-23-001, Public Health Epidemiology, Prevention and Control of Influenza and Other Respiratory Pathogens in China, RFA-IP-23-004, Developing, Implementing, and Evaluating Protocols to Increase Routine Adult Immunization Coverage Among Persons Who are Incarcerated, and RFA-IP-23-005, Approach to Adult Vaccine Counseling.

*Date:* April 11-12, 2023.

*Time:* 10 a.m.-5 p.m., EDT.

*Place:* Teleconference, Centers for Disease Control and Prevention, Room 1077, 8 Corporate Boulevard, Atlanta, Georgia 30329.

*Agenda:* To review and evaluate grant applications.

*For Further Information Contact:* Gregory Anderson, M.S., M.P.H., Scientific Review Officer, National

Center for HIV, Viral Hepatitis, STD, and TB Prevention, CDC, 1600 Clifton Road NE, Mailstop US8-1, Atlanta, Georgia 30329-4027; Telephone: (404) 718-8833; Email: [GAnderson@cdc.gov](mailto:GAnderson@cdc.gov).

The Director, Strategic Business Initiatives Unit, Office of the Chief Operating Officer, Centers for Disease Control and Prevention, has been delegated the authority to sign **Federal Register** notices pertaining to announcements of meetings and other committee management activities, for both the Centers for Disease Control and Prevention and the Agency for Toxic Substances and Disease Registry.

#### Kalwant Smagh,

*Director, Strategic Business Initiatives Unit, Office of the Chief Operating Officer, Centers for Disease Control and Prevention.*

[FR Doc. 2023-00242 Filed 1-10-23; 8:45 am]

BILLING CODE 4163-18-P

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### Agency for Toxic Substances and Disease Registry

[60Day-23-0063; Docket No. ATSDR-2022-0007]

#### Proposed Data Collection Submitted for Public Comment and Recommendations

**AGENCY:** Agency for Toxic Substances and Disease Registry (ATSDR), Department of Health and Human Services (HHS).

**ACTION:** Notice with comment period.

**SUMMARY:** The Agency for Toxic Substances and Disease Registry (ATSDR), as part of its continuing effort to reduce public burden and maximize the utility of government information, invites the general public and other federal agencies the opportunity to comment on a continuing information collection, as required by the Paperwork Reduction Act of 1995. This notice invites comment on a proposed information collection project titled Human Health Effects of Drinking Water Exposures to Per- and Polyfluoroalkyl Substances (PFAS): A Multi-site Cross-sectional Study (The Multi-site Study). The purpose of this research is to use sound study methods to see if drinking water exposure to PFAS is related to health outcomes.

**DATES:** ATSDR must receive written comments on or before March 13, 2023.

**ADDRESSES:** You may submit comments, identified by Docket No. ATSDR-2022-0007 by either of the following methods:

• *Federal eRulemaking Portal:* [www.regulations.gov](http://www.regulations.gov). Follow the instructions for submitting comments.

• *Mail:* Jeffrey M. Zirger, Information Collection Review Office, Centers for Disease Control and Prevention, 1600 Clifton Road NE, MS H21-8, Atlanta, Georgia 30329.

*Instructions:* All submissions received must include the agency name and Docket Number. ATSDR will post, without change, all relevant comments to [www.regulations.gov](http://www.regulations.gov).

*Please note:* Submit all comments through the Federal eRulemaking portal ([www.regulations.gov](http://www.regulations.gov)) or by U.S. mail to the address listed above.

**FOR FURTHER INFORMATION CONTACT:** To request more information on the proposed project or to obtain a copy of the information collection plan and instruments, contact Jeffrey M. Zirger, Information Collection Review Office, Centers for Disease Control and Prevention, 1600 Clifton Road NE, MS H21-8, Atlanta, Georgia 30329; Telephone: 404-639-7118; Email: [omb@cdc.gov](mailto:omb@cdc.gov).

**SUPPLEMENTARY INFORMATION:** Under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501-3520), federal agencies must obtain approval from the Office of Management and Budget (OMB) for each collection of information they conduct or sponsor. In addition, the PRA also requires federal agencies to provide a 60-day notice in the **Federal Register** concerning each proposed collection of information, including each new proposed collection, each proposed extension of existing collection of information, and each reinstatement of previously approved information collection before submitting the collection to the OMB for approval. To comply with this requirement, we are publishing this notice of a proposed data collection as described below.

The OMB is particularly interested in comments that will help:

1. Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;
2. Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
3. Enhance the quality, utility, and clarity of the information to be collected;
4. Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated,

electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submissions of responses; and

5. Assess information collection costs.

### Proposed Project

Human Health Effects of Drinking Water Exposures to Per- and Polyfluoroalkyl Substances (PFAS): A Multi-site Cross-sectional Study (The Multi-site Study) (OMB Control No. 0923-0063, Exp. 5/31/2023)—Revision—Agency for Toxic Substances and Disease Registry (ATSDR).

#### Background and Brief Description

The Agency for Toxic Substances and Disease Registry (ATSDR) is requesting a three-year revision of the Paperwork Reduction Act (PRA) information collection request (ICR) titled "Human Health Effects of Drinking Water Exposures to Per- and Polyfluoroalkyl Substances (PFAS): A Multi-site Cross-sectional Study (The Multi-site Study)" (OMB Control No. 0923-0063, Exp. Date 05/31/2023).

Per- and polyfluoroalkyl substances (PFAS) are a family of chemicals used in industrial applications and consumer products. PFAS contamination of drinking water is widespread in the U.S. Some estimates indicate that at least 60 million residents were served by 66 public water supplies that had at least one sample at or above the U.S. Environmental Protection Agency (EPA) Lifetime Health Advisory for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) (individually or combined), which is 70 nanograms per liter (ng/L) of water. Industrial facilities that manufacture or use PFAS have contaminated drinking water in surrounding communities in several states. In addition, PFOS, PFOA, perfluorohexane sulfonic acid (PFHxS) and other PFAS chemicals are constituents in aqueous film-forming foam (AFFF), used to extinguish flammable liquid fires. The use of AFFF at military bases and other sites may have resulted in the migration of PFAS chemicals through soils to ground water and/or surface water sources of drinking water for the bases and/or surrounding communities around the country.

In response to growing awareness of the extent of PFAS contamination across the U.S., Section 316(a) of the 2018 National Defense Authorization Act (Pub. L. 115-91), as amended by Section 315 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232), first authorized and appropriated funds for ATSDR to conduct this study on the

human health effects of PFAS contamination in drinking water. The existence of widespread contamination at many sites across the U.S. makes this a paramount effort in addressing the health effects of exposures to PFAS from contaminated drinking water. Currently, the study is funded through section 337 of the William M. (Mac) Thornberry National Defense Authorization Act for fiscal years 2019 through 2023 (Pub. L. 116-283).

The Multi-site Study builds on research methods and activities developed for the proof-of-concept study at the Pease International Tradeport in Portsmouth, New Hampshire (the Pease Study) (OMB Control No. 0923-0061, Discontinued 08/31/2022). These methods and activities included developing data management systems and community engagement materials, modifying the childhood neurobehavioral test battery, adjusting blood collection volume, and modifying data collection materials such as the childhood questionnaire and medical records abstraction forms.

ATSDR is conducting this cooperative research program under Notice of Funding Opportunity (NOFO) No. CDC-RFA-TS-19-002, titled "Multi-site Study of the Health Implications of Exposure to PFAS-Contaminated Drinking Water." The seven research recipients are University of Colorado School of Public Health, Michigan State Department of Health and Human Services, Pennsylvania Department of Health and RTI International, Rutgers School of Public Health, Silent Spring Institute, SUNY at Albany and the New York State Department of Health, and the University of California at Irvine.

Under the cooperative agreement, each recipient proposed candidate study sites at communities whose drinking water was impacted by AFFF use or by industrial PFAS releases. Site selection considered the documented levels of PFAS drinking water concentrations. The aim was to include sites so that a wide range in PFAS exposures levels were included in the study. This will enable the evaluation of exposure-response trends including effects at the lower range of exposures. Ground water contaminant fate and transport models and water distribution system models may be necessary to identify the areas with contaminated drinking water, to determine the period when the drinking water was contaminated, and to reconstruct historical PFAS contaminant concentrations.

The Multi-site Study is designed to aggregate data across all recipient sites. The main goal of this cross-sectional study is to evaluate associations



between measured and reconstructed historic serum levels of PFAS including PFOA, PFOS, and PFHxS, and selected health outcomes. The health outcomes of interest include lipids, renal function and kidney disease, thyroid hormones and disease, liver function and disease, glycemic parameters and diabetes, as well as immune response and function in both children and adults. In addition, the study will investigate PFAS differences in sex hormones and sexual maturation, vaccine response, and neurobehavioral outcomes in children. In adults, additional outcomes of interest include cardiovascular disease, osteoarthritis and osteoporosis, endometriosis, and autoimmune disease.

For exposure estimation, participants will be categorized based on their measured serum concentration of PFAS compounds or on modeled estimated historical serum levels (*e.g.*, referent or low, medium, high). Measured and estimated PFAS serum levels will also be evaluated as continuous variables. At sites with prior PFAS biomonitoring data, the study will evaluate changes in PFAS concentration over time.

Each recipient is reconstructing historic serum PFAS concentrations. This is being done by estimating half-lives and elimination rates as well as by water contamination modeling to inform pharmacokinetic (PK) or physiologically based pharmacokinetic (PBPK) models. Historical serum PFAS reconstruction will enable the evaluation of exposure lags and vulnerable periods as well as statistical analyses that can control for confounding and reverse causation due to physiological factors. Over the first three years of the five-year cooperative agreement program, the recipients have prepared working group support documents describing the methods used by sites for the historical reconstruction and for the whole consortium for the PBPK modeling. Both documents that are undergoing external peer review as required by ATSDR.

If feasible, each recipient is identifying and enumerating all households served by the contaminated drinking water supply in the selected community to recruit potential participants and to meet the sample size requirements for children and adults. If the selected community is served by a PFAS-contaminated public water system, then the recipient will obtain a list of households served by the water purveyor from its billing records. ATSDR estimates that up to 14 public water purveyors will spend ten hours each to retrieve lists of households they serve per year ( $n=140$  hours total). If the community is served by contaminated

private wells, then the recipient will obtain a list of households with contaminated wells from the local and/or state health and environmental agencies. ATSDR estimates that up to seven environmental protection agencies will spend seven hours each to retrieve lists of households with contaminated private wells per year ( $n=49$  hours total).

Statistical sampling methods (*e.g.*, a two-stage cluster sample) may be used for recruitment of study participants if all the affected households can be enumerated. If the PFAS drinking water concentrations vary widely across the community, then the recipient can use targeted sampling approaches—including oversampling of areas with higher PFAS concentrations—to ensure a sufficiently wide distribution of exposure levels among study participants to evaluate exposure-response trends. If enumeration of all households is not feasible, or if participation rates are expected to be low, then the recipient can consider non-probabilistic sampling approaches such as “judgment” and “snowball” sampling approaches.

The recipients should consider requesting assistance from local and state health departments in their recruitment efforts. In addition, the recipients should engage community organizations to assist in conducting outreach about the study and recruitment of participants and consider establishing a community assistance panel (CAP). The CAP could provide comments on any additional investigator-initiated research questions and hypotheses and facilitate the involvement of the affected community in decisions related to outreach about the study, participant recruitment strategies, and study logistics. The CAP could also assist the recipient in the dissemination of study findings to the community.

In total, ATSDR seeks to cumulatively enroll approximately 9,100 participants (7,000 adults and 2,100 children and their parents) from communities exposed to PFAS-contaminated drinking water. In total, each recipient will attempt to meet a target recruitment of 1,000 adults and 300 children. Annualized estimates are 3,033 participants (2,333 adults and 700 children). Over the first three years of the five-year cooperative agreement program, the recipients have enrolled over 3,000 adults and over 300 children (as of 11/17/2022). The enrollment of children has been especially challenging during and following major closures and access to schools and other educational

facilities due to the COVID-19 pandemic.

To restrict this study to drinking water exposures, adults occupationally exposed to PFAS are not eligible for the study (*e.g.*, ever firefighters or ever workers in an industry using PFAS chemicals in its manufacturing process). Likewise, children whose birth mothers were occupationally exposed will not be eligible.

Assuming a 95% eligibility rate and a 40% response rate, ATSDR estimates that the recipients will screen 7,982 people (6,140 adults and 1,842 children) each year across all sites in order to recruit the target sample size of 3,033 participants (2,333 adults and 700 children), using an annual time burden of 1,330 hours. The recipients will provide appointment reminder calls for each eligible person who agrees to be enrolled ( $n=3,033$  per year).

At enrollment, each recipient will obtain adult consent, parental permission, and child assent before data collection begins. For each participant, the recipient will take body measures, collect blood samples to measure PFAS serum levels and several effect biomarkers such as lipids, and thyroid, kidney, immune and liver function. Recipients will also obtain urine samples from participants to measure PFAS levels and kidney function biomarkers. The study will archive leftover serum and urine samples for additional analyses of PFAS chemicals and specific effect biomarkers. The National Center for Environmental Health (NCEH) laboratory will perform blood and urine PFAS analyses for all Multi-site Study participants. Thus, issues of inter-laboratory variability for exposure measures will be eliminated.

Adult participants and a parent of child participants will complete a questionnaire that includes residential history, medical history, occupational history, and water consumption habits ( $n=3,033$  adults and 700 children per year). Ideally, the parent will be the child's birth mother, as ATSDR will ask details about the child's exposure, pregnancy, and breastfeeding history. For purposes of time burden estimation, ATSDR assumes that 20% of parents ( $n=140$  per year) will also enroll as adults and can take the child short form questionnaire; therefore, 560 parents will take the child long form questionnaire per year. Parents and children, with administration by trained professionals, will also complete neurobehavioral assessments of the child's attention and behaviors ( $n=700$  per year). The time burden for responding to questionnaires is 1,482

hours, and for neurobehavioral assessments is 1,225, per year.

To facilitate access to medical and school records, each recipient will reach out to local medical societies, public school systems, and private schools, to enlist their cooperation with the study. The recipient will ask for permission to verify participants' medical conditions to confirm self-reported health outcomes. Recipients will also seek permission to obtain information from the children's school records to

supplement their behavioral assessment results. Based on ATSDR's experience from the Pease Study (OMB Control No. 0923-0061, Discontinued 08/31/2022), ATSDR estimates that it will take 30 school administrators, 48 education specialists, 70 medical office administrators, and 150 adult and 50 pediatric medical record specialists to complete health condition and school information verification and abstractions across all study sites. The annual time burden for medical and

educational record abstraction is estimated to be 2,490 hours.

ATSDR is revising and updating portions of the protocol related to PFAS analytes. ATSDR has no plans to revise the previously approved data collection forms, nor the annual number of burden hours (n=8,149), respondents (n=27,949), and responses (n=35,121). There is no cost to the respondents other than their time.

ESTIMATED ANNUALIZED BURDEN HOURS

Type of respondents	Form name	Number of respondents	Number of responses per respondent	Average burden per response (in hours)	Total burden (in hours)
Public Water Purveyors .....	Drinking Water Information Collection Form.	14	1	10	140
Environmental Protection Agencies.	Drinking Water Information Collection Form.	7	1	7	49
Multi-site Study Participants .....	Eligibility Screening Script .....	7,982	1	10/60	1,330
	Appointment Reminder Telephone Script	3,033	1	5/60	253
	Update Contact Information Hardcopy Form.	3,033	1	5/60	253
	Medication List .....	3,033	1	3/60	152
	Body and Blood Pressure Measures Form.	3,033	1	5/60	253
	Blood Draw and Urine Collection Form ...	3,033	1	10/60	506
	Adult Questionnaire .....	2,333	1	30/60	1,167
	Child Questionnaire—Long Form .....	560	1	30/60	280
	Child Questionnaire—Short Form .....	140	1	15/60	35
	Parent Neurobehavioral Test Battery .....	700	1	15/60	175
Medical Office Administrators ...	Child Neurobehavioral Test Battery .....	700	1	90/60	1,050
	Request for Medical Record Abstraction	70	43	20/60	1,003
Medical Records Specialists .....	Medical Record Abstraction Form—Adult	150	16	20/60	800
	Medical Record Abstraction Form—Child	50	14	20/60	233
School Administrators .....	Request for Child School Record Abstraction.	30	23	20/60	230
Education Specialists .....	Child School Record Abstraction Form ...	48	15	20/60	240
<b>Total .....</b>					<b>8,149</b>

**Jeffrey M. Zirger,**

Lead, Information Collection Review Office, Office of Scientific Integrity, Office of Science, Centers for Disease Control and Prevention.

[FR Doc. 2023-00333 Filed 1-10-23; 8:45 am]

BILLING CODE 4163-70-P

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Food and Drug Administration**

[Docket No. FDA-2022-N-3351]

**Authorization of Emergency Use of an In Vitro Diagnostic Device in Response to an Outbreak of Mpox; Availability**

**AGENCY:** Food and Drug Administration, HHS.

**ACTION:** Notice.

**SUMMARY:** The Food and Drug Administration (FDA or Agency) is

announcing the issuance of an Emergency Use Authorization (EUA) (the Authorization) under the Federal Food, Drug, and Cosmetic Act (FD&C Act) in response to an outbreak of mpox. FDA has issued an Authorization for an in vitro diagnostic device as requested by Life Technologies Corporation (a part of Thermo Fisher Scientific Inc.). The Authorization contains, among other things, conditions on the emergency use of the authorized product. The Authorization follows the August 9, 2022, determination by the Secretary of Health and Human Services (HHS) that there is a public health emergency, or a significant potential for a public health emergency, that affects, or has a significant potential to affect, national security or the health and security of U.S. citizens living abroad, and that involves monkeypox virus. On the basis of such determination, the Secretary of

HHS declared, on September 7, 2022, that circumstances exist justifying the authorization of emergency use of in vitro diagnostics for detection and/or diagnosis of infection with the monkeypox virus, including in vitro diagnostics that detect and/or diagnose infection with non-variola *Orthopoxvirus*, pursuant to the FD&C Act, subject to terms of any authorization issued under that section. The Authorization, which includes an explanation of the reasons for issuance, is reprinted in this document.

**DATES:** The Authorization is effective as of December 13, 2022.

**ADDRESSES:** Submit written requests for a single copy of the EUA to the Office of Counterterrorism and Emerging Threats, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 1, Rm. 4338, Silver Spring, MD 20993-0002. Send one self-addressed adhesive

label to assist that office in processing your request or include a Fax number to which the Authorization may be sent. See the **SUPPLEMENTARY INFORMATION** section for electronic access to the Authorization.

**FOR FURTHER INFORMATION CONTACT:**

Jennifer Ross, Office of Counterterrorism and Emerging Threats, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 1, Rm. 4332, Silver Spring, MD 20993-0002, 301-796-8510 (this is not a toll-free number).

**SUPPLEMENTARY INFORMATION:**

**I. Background**

Section 564 of the FD&C Act (21 U.S.C. 360bbb-3) allows FDA to strengthen public health protections against biological, chemical, nuclear, and radiological agents. Among other things, section 564 of the FD&C Act allows FDA to authorize the use of an unapproved medical product or an unapproved use of an approved medical product in certain situations. With this EUA authority, FDA can help ensure that medical countermeasures may be used in emergencies to diagnose, treat, or prevent serious or life-threatening diseases or conditions caused by biological, chemical, nuclear, or radiological agents when there are no adequate, approved, and available alternatives (among other criteria).

**II. Criteria for EUA Authorization**

Section 564(b)(1) of the FD&C Act provides that, before an EUA may be issued, the Secretary of HHS must declare that circumstances exist justifying the authorization based on one of the following grounds: (1) a determination by the Secretary of Homeland Security that there is a domestic emergency, or a significant potential for a domestic emergency, involving a heightened risk of attack with a biological, chemical, radiological, or nuclear agent or agents; (2) a determination by the Secretary of Defense that there is a military emergency, or a significant potential for a military emergency, involving a heightened risk to U.S. military forces, including personnel operating under the authority of title 10 or title 50, U.S. Code, of attack with (A) a biological, chemical, radiological, or nuclear agent or agents or (B) an agent or agents that may cause, or are otherwise associated with, an imminently life-threatening and specific risk to U.S. military forces;<sup>1</sup> (3) a determination by the

Secretary of HHS that there is a public health emergency, or a significant potential for a public health emergency, that affects, or has a significant potential to affect, national security or the health and security of U.S. citizens living abroad, and that involves a biological, chemical, radiological, or nuclear agent or agents, or a disease or condition that may be attributable to such agent or agents; or (4) the identification of a material threat by the Secretary of Homeland Security pursuant to section 319F-2 of the Public Health Service (PHS) Act (42 U.S.C. 247d-6b) sufficient to affect national security or the health and security of U.S. citizens living abroad.

Once the Secretary of HHS has declared that circumstances exist justifying an authorization under section 564 of the FD&C Act, FDA may authorize the emergency use of a drug, device, or biological product if the Agency concludes that the statutory criteria are satisfied. Under section 564(h)(1) of the FD&C Act, FDA is required to publish in the **Federal Register** a notice of each authorization, and each termination or revocation of an authorization, and an explanation of the reasons for the action. Under section 564(h)(1) of the FD&C Act, revisions to an authorization shall be made available on the internet website of FDA. Section 564 of the FD&C Act permits FDA to authorize the introduction into interstate commerce of a drug, device, or biological product intended for use in an actual or potential emergency when the Secretary of HHS has declared that circumstances exist justifying the authorization of emergency use. Products appropriate for emergency use may include products and uses that are not approved, cleared, or licensed under sections 505, 510(k), 512, or 515 of the FD&C Act (21 U.S.C. 355, 360(k), 360b, or 360e) or section 351 of the PHS Act (42 U.S.C. 262), or conditionally approved under section 571 of the FD&C Act (21 U.S.C. 360ccc).

FDA may issue an EUA only if, after consultation with the HHS Assistant Secretary for Preparedness and Response, the Director of the National Institutes of Health, and the Director of the Centers for Disease Control and Prevention (to the extent feasible and appropriate given the applicable circumstances), FDA<sup>2</sup> concludes: (1) that an agent referred to in a declaration of emergency or threat can cause a

serious or life-threatening disease or condition; (2) that, based on the totality of scientific evidence available to FDA, including data from adequate and well-controlled clinical trials, if available, it is reasonable to believe that (A) the product may be effective in diagnosing, treating, or preventing (i) such disease or condition or (ii) a serious or life-threatening disease or condition caused by a product authorized under section 564, approved or cleared under the FD&C Act, or licensed under section 351 of the PHS Act, for diagnosing, treating, or preventing such a disease or condition caused by such an agent and (B) the known and potential benefits of the product, when used to diagnose, prevent, or treat such disease or condition, outweigh the known and potential risks of the product, taking into consideration the material threat posed by the agent or agents identified in a declaration under section 564(b)(1)(D) of the FD&C Act, if applicable; (3) that there is no adequate, approved, and available alternative to the product for diagnosing, preventing, or treating such disease or condition; (4) in the case of a determination described in section 564(b)(1)(B)(ii) of the FD&C Act, that the request for emergency use is made by the Secretary of Defense; and (5) that such other criteria as may be prescribed by regulation are satisfied.

No other criteria for issuance have been prescribed by regulation under section 564(c)(4) of the FD&C Act.

**III. The Authorization**

The Authorization follows the August 9, 2022, determination by the Secretary of HHS that there is a public health emergency, or a significant potential for a public health emergency, that affects, or has a significant potential to affect, national security or the health and security of U.S. citizens living abroad, and that involves monkeypox virus. Notice of the Secretary's determination was provided in the **Federal Register** on August 15, 2022 (87 FR 50090). On the basis of such determination, the Secretary of HHS declared, on September 7, 2022, that circumstances exist justifying the authorization of emergency use of in vitro diagnostics for detection and/or diagnosis of infection with the monkeypox virus, including in vitro diagnostics that detect and/or diagnose infection with non-variola *Orthopoxvirus*, pursuant to section 564 of the FD&C Act, subject to the terms of any authorization issued under that section. Notice of the Secretary's declaration was provided in the **Federal Register** on September 13, 2022 (87 FR 56074). On December 13, 2022, having concluded that the criteria for issuance

<sup>1</sup> In the case of a determination by the Secretary of Defense, the Secretary of HHS shall determine within 45 calendar days of such determination, whether to make a declaration under section

564(b)(1) of the FD&C Act, and, if appropriate, shall promptly make such a declaration.

<sup>2</sup> The Secretary of HHS has delegated the authority to issue an EUA under section 564 of the FD&C Act to the Commissioner of Food and Drugs.

of the Authorization under section 564(c) of the FD&C Act are met, FDA issued an EUA to Life Technologies Corporation (a part of Thermo Fisher Scientific Inc.) for the TaqPath Monkeypox/Orthopox Virus DNA Kit, subject to the terms of the Authorization. The Authorization, which is included below in its entirety after section IV of this document (not including the authorized versions of the

fact sheets and other written materials), provides an explanation of the reasons for issuance, as required by section 564(h)(1) of the FD&C Act. Any subsequent revision to the Authorization can be found on FDA's web page at: <https://www.fda.gov/emergency-preparedness-and-response/mcm-legal-regulatory-and-policy-framework/emergency-use-authorization>.

#### IV. Electronic Access

An electronic version of this document and the full text of the Authorization is available on the internet at: <https://www.fda.gov/emergency-preparedness-and-response/mcm-legal-regulatory-and-policy-framework/emergency-use-authorization>.

BILLING CODE 4164-01-P



December 13, 2022

Stacey Moltchanoff  
Regulatory Affairs Manager  
Life Technologies Corporation (a part of Thermo Fisher Scientific Inc.)  
5781 Van Allen Way  
Carlsbad, CA 92008

Device: TaqPath Monkeypox/Orthopox Virus DNA Kit  
EUA Number: EUA220461  
Company: Life Technologies Corporation (a part of Thermo Fisher Scientific Inc.)  
Indication: This test is authorized for the qualitative detection of DNA from monkeypox virus (clade I/II)<sup>1</sup> and non-variola *Orthopoxvirus* in human lesion swab specimens (i.e., swabs of acute pustular or vesicular rash) from individuals suspected of mpox<sup>2</sup> by their healthcare provider.  
Emergency use of this test is limited to authorized laboratories.  
Authorized Laboratories: Laboratories certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA), 42 U.S.C. §263a, that meet the requirements to perform high complexity tests.

Dear Ms. Moltchanoff:

This letter is in response to your<sup>3</sup> request that the Food and Drug Administration (FDA) issue an Emergency Use Authorization (EUA) for emergency use of your product,<sup>4</sup> pursuant to Section 564 of the Federal Food, Drug, and Cosmetic Act (the Act) (21 U.S.C. §360bbb-3).

<sup>1</sup> On August 12, 2022, following a meeting convened by the World Health Organization (WHO) monkeypox virus variants were renamed to align with current best practices under the International Classification of Diseases and the WHO Family of International Health Related Classifications (WHO-FIC). This letter will refer to the former Congo Basin (Central African) clade as clade one (I) and the former West African clade as clade two (II). Refer to: <https://www.who.int/news/item/12-08-2022-monkeypox--experts-give-virus-variants-new-names>.

<sup>2</sup> On November 28, 2022, following a series of consultations with global experts, the World Health Organization (WHO) began using a new preferred term "mpox" as a synonym for monkeypox, the disease cause by the monkeypox virus. Refer to: <https://www.who.int/news/item/28-11-2022-who-recommends-new-name-for-monkeypox-disease>.

<sup>3</sup> For ease of reference, this letter will use the term "you" and related terms to refer to Life Technologies Corporation (a part of Thermo Fisher Scientific Inc.)

<sup>4</sup> For ease of reference, this letter will use the term "your product" to refer to the TaqPath Monkeypox/Orthopox

Page 2 – Stacey Moltchanoff, Life Technologies Corporation (a part of Thermo Fisher Scientific Inc.)

On August 9, 2022, pursuant to Section 564(b)(1)(C) of the Act, the Secretary of the Department of Health and Human Services (HHS) determined that there is a public health emergency, or a significant potential for a public health emergency, that affects or has a significant potential to affect national security or the health and security of United States citizens living abroad that involves monkeypox virus.<sup>5</sup> Pursuant to Section 564 of the Act, and on the basis of such determination, the Secretary of HHS then declared on September 7, 2022 that circumstances exist justifying the authorization of emergency use of in vitro diagnostics for detection and/or diagnosis of infection with the monkeypox virus, including in vitro diagnostics that detect and/or diagnose infection with non-variola *Orthopoxvirus*, subject to the terms of any authorization issued under Section 564(a) of the Act.<sup>6</sup>

FDA considered the totality of scientific information available in authorizing the emergency use of your product for the indication above. A summary of the performance information FDA relied upon is contained in the “TaqPath Monkeypox/Orthopox Virus DNA Kit Instructions for Use.” There is an FDA-cleared test for the qualitative detection of non-variola *Orthopoxvirus*, that includes monkeypox virus, but this is not an adequate and available alternative to your product.<sup>7</sup>

Having concluded that the criteria for issuance of this authorization under Section 564(c) of the Act are met, I am authorizing the emergency use of your product, described in the Scope of Authorization of this letter (Section II), subject to the terms of this authorization.

#### **I. Criteria for Issuance of Authorization**

I have concluded that the emergency use of your product meets the criteria for issuance of an authorization under Section 564(c) of the Act, because I have concluded that:

1. The monkeypox virus can cause a serious or life-threatening disease or condition, to humans infected by this virus;
2. Based on the totality of scientific evidence available to FDA, it is reasonable to believe that your product may be effective in diagnosing infection with the monkeypox virus, and that the known and potential benefits of your product when used for diagnosing monkeypox virus, outweigh the known and potential risks of your product; and

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Virus DNA Kit used for the indication identified above.

<sup>5</sup> 87 FR 50090 (August 15, 2022)

<sup>6</sup> 87 FR 56074 (September 13, 2022)

<sup>7</sup> To date, the FDA-cleared CDC Non-variola *Orthopoxvirus* Real-time PCR Primer and Probe Set (Product Code: PBK; DEN070001, K181205, K221658, K221834, K222558) is the only test available in the United States with FDA clearance for the detection of non-variola *Orthopoxvirus* DNA, including vaccinia, cowpox, monkeypox and ectromelia viruses at varying concentrations. Available information indicates that timely detection of monkeypox cases in the United States requires wide availability of diagnostic testing to control the spread of this contagious infection and there is currently a need for additional diagnostic testing for monkeypox virus in the United States.

Page 3 – Stacey Moltchanoff, Life Technologies Corporation (a part of Thermo Fisher Scientific Inc.)

3. There is no adequate, approved, and available alternative to the emergency use of your product.<sup>8</sup>

## II. Scope of Authorization

I have concluded, pursuant to Section 564(d)(1) of the Act, that the scope of this authorization is limited to the indication above.

### Authorized Product Details

Your product is a multiplexed real-time polymerase chain reaction (RT-PCR) test intended for the qualitative detection of DNA from monkeypox virus (clade I/II) and non-variola *Orthopoxvirus* in human lesion swab specimens (i.e., swabs of acute pustular and vesicular rash) from individuals suspected of mpox by their healthcare provider. Testing is limited to laboratories certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA), 42 U.S.C. §263a, that meet the requirements to perform high complexity tests.

Results are for the identification of monkeypox virus (clade I/II) and non-variola *Orthopoxvirus* DNA, which is generally detectable in human pustular or vesicular lesion specimens during the acute phase of infection. Positive results are indicative of the presence of monkeypox virus (clade I/II) DNA and/or other non-variola *Orthopoxvirus* DNA; clinical correlation with patient history and other diagnostic information is necessary to determine patient infection status. Positive results do not rule out bacterial infection or co-infection with other viruses. The agent detected may not be the definite cause of disease. Negative results obtained with this device do not preclude monkeypox virus (clade I/II) and/or non-variola *Orthopoxvirus* infection and should not be used as the sole basis for treatment or other patient management decisions. Negative results must be combined with clinical observations, patient history, and epidemiological information.

To use your product, monkeypox virus (clade I/II) or non-variola *Orthopoxvirus* nucleic acid is first extracted, isolated and purified from lesion swab specimens followed by PCR amplification and detection using an authorized RT-PCR instrument described in the authorized labeling (described below). The TaqPath Monkeypox/Orthopox Virus DNA Kit includes the materials (or other authorized materials as may be requested under Condition O. below) described in the “TaqPath Monkeypox/Orthopox Virus DNA Kit Instructions for Use.”

Your product requires control materials (or other authorized control materials as may be requested under Condition O. below) that are described in the Instructions for Use. Your product also requires the use of additional authorized materials and authorized ancillary reagents that are not included with your product and are described in the Instructions for Use described below.

The labeling entitled “TaqPath Monkeypox/Orthopox Virus DNA Kit Instructions for Use” (available at <https://www.fda.gov/medical-devices/emergency-use-authorizations-medical-devices/monkeypox-emergency-use-authorizations-medical-devices>), the “TaqPath Monkeypox/Orthopox Virus DNA Kit” Product Information Sheet, and the following fact sheets

<sup>8</sup> No other criteria of issuance have been prescribed by regulation under Section 564(c)(4) of the Act.

Page 4 – Stacey Moltchanoff, Life Technologies Corporation (a part of Thermo Fisher Scientific Inc.)

pertaining to the emergency use, are required to be made available as set forth in the Conditions of Authorization (Section IV), and are collectively referred to as “authorized labeling”:

- Fact Sheet for Healthcare Providers: Life Technologies Corporation (a part of Thermo Fisher Scientific Inc.) – TaqPath Monkeypox/Orthopox Virus DNA Kit
- Fact Sheet for Patients: Life Technologies Corporation (a part of Thermo Fisher Scientific Inc.) – TaqPath Monkeypox/Orthopox Virus DNA Kit

The above described product, when accompanied by the authorized labeling provided as set forth in the Conditions of Authorization (Section IV), is authorized to be distributed to and used by authorized laboratories under this EUA, despite the fact that it does not meet certain requirements otherwise required by applicable federal law.

I have concluded, pursuant to Section 564(d)(2) of the Act, that it is reasonable to believe that the known and potential benefits of your product, when used consistent with the Scope of Authorization of this letter (Section II), outweigh the known and potential risks of your product.

I have concluded, pursuant to Section 564(d)(3) of the Act, based on the totality of scientific evidence available to FDA, that it is reasonable to believe that your product may be effective in diagnosing infection with the monkeypox virus, when used consistent with the Scope of Authorization of this letter (Section II), pursuant to Section 564(c)(2)(A) of the Act.

FDA has reviewed the scientific information available to FDA, including the information supporting the conclusions described in Section I above, and concludes that your product (as described in the Scope of Authorization of this letter (Section II)) meets the criteria set forth in Section 564(c) of the Act concerning safety and potential effectiveness.

The emergency use of your product under this EUA must be consistent with, and may not exceed, the terms of this letter, including the Scope of Authorization (Section II) and the Conditions of Authorization (Section IV). Subject to the terms of this EUA and under the circumstances set forth in the Secretary of HHS's determination under Section 564(b)(1)(C) of the Act described above and the Secretary of HHS's corresponding declaration under Section 564(b)(1) of the Act, your product is authorized for the indication above.

### III. Waiver of Certain Requirements

I am waiving the following requirements for your product during the duration of this EUA:

- Current good manufacturing practice requirements, including the quality system requirements under 21 CFR Part 820 with respect to the design, manufacture, packaging, labeling, storage, and distribution of your product, but excluding Subpart H (Acceptance Activities, 21 CFR 820.80 and 21 CFR 820.86), Subpart I (Nonconforming Product, 21 CFR 820.90), Subpart O (Statistical Techniques, 21 CFR 820.250) and Subpart M (Complaint Files, 21 CFR 820.198).

### IV. Conditions of Authorization

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Pursuant to Section 564(e) of the Act, I am establishing the following conditions on this authorization:

**Life Technologies Corporation (a part of Thermo Fisher Scientific Inc.) (You) and Authorized Distributor(s)<sup>9</sup>**

- A. Your product must comply with the following labeling requirements pursuant to FDA regulations: the intended use statement (21 CFR 809.10(a)(2), (b)(2)); adequate directions for use (21 U.S.C. 352(f)), (21 CFR 809.10(b)(5), (7), and (8)); appropriate limitations on the use of the device including information required under 21 CFR 809.10(a)(4); and any available information regarding performance of the device, including requirements under 21 CFR 809.10(b)(12).
- B. Your product must comply with the following quality system requirements pursuant to FDA regulations: 21 CFR 820 Subpart H (Acceptance Activities, 21 CFR 820.80 and 21 CFR 820.86), Subpart I (Nonconforming Product, 21 CFR 820.90), Subpart O (Statistical Techniques, 21 CFR 820.250), and Subpart M (Complaint Files, 21 CFR 820.198).
- C. You and authorized distributor(s) must make your product available with the authorized labeling to authorized laboratories.
- D. You and authorized distributor(s) must make available on your website(s) the authorized labeling.
- E. You and authorized distributor(s) must include a physical copy of the authorized “TaqPath Monkeypox/Orthopox Virus DNA Kit” Product Information Sheet with each shipped product to authorized laboratories, and must make the authorized “TaqPath Monkeypox/Orthopox Virus DNA Kit Instructions for Use” electronically available with the opportunity to request a copy in paper form, and after such request, you must promptly provide the requested information without additional cost.
- F. You and authorized distributor(s) must inform authorized laboratories and relevant public health authorities of this EUA, including the terms and conditions herein, and any updates made to your product and authorized labeling.
- G. Through a process of inventory control, you and authorized distributor(s) must maintain records of the authorized laboratories to which your product is distributed and the number of your product distributed.
- H. You and authorized distributor(s) must collect information on the performance of your product. You must report any significant deviations from the established performance characteristics of your product of which you become aware to the Division of Microbiology (DMD)/Office of Health Technology 7 (OHT7): Office of In Vitro

<sup>9</sup> “Authorized Distributor(s)” are identified by you, Life Technologies Corporation (a part of Thermo Fisher Scientific Inc.), in your EUA submission as an entity allowed to distribute your product.



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Diagnostics /Office of Product Evaluation and Quality (OPEQ)/Center for Devices and Radiological Health (CDRH) (via email: [CDRH-EUA-Reporting@fda.hhs.gov](mailto:CDRH-EUA-Reporting@fda.hhs.gov)).

- I. You and authorized distributor(s) are authorized to make available additional information relating to the emergency use of your product that is consistent with, and does not exceed, the terms of this letter of authorization.

**Life Technologies Corporation (a part of Thermo Fisher Scientific Inc.) (You)**

- J. You must register and list consistent with 21 CFR Part 807 within one month of this letter.
- K. You must notify FDA of any authorized distributor(s) of your product, including the name, address, and phone number of any authorized distributor(s).
- L. You must have a signed agreement with each authorized distributor that distribution of the authorized product must be consistent with this Letter of Authorization.
- M. If requested by FDA, you must submit associated documents and records related to your quality system for FDA review within 48 hours of the request.
- N. You must provide authorized distributor(s) with a copy of this EUA and communicate to authorized distributor(s) any subsequent amendments that might be made to this EUA and its authorized accompanying materials (e.g., Fact Sheets).
- O. You may request modifications to this EUA for your product, including to the Scope of Authorization (Section II in this letter) or to the authorized labeling, including requests to make available additional authorized labeling specific to an authorized distributor. Such additional labeling may use another name for the product but otherwise must be consistent with the authorized labeling, and not exceed the terms of authorization of this letter. Any request for modification to this EUA should be submitted to DMD/OHT7/OPEQ/CDRH and require appropriate authorization from FDA.
- P. You must have lot release procedures and the lot release procedures, including the study design and statistical power, must ensure that the tests released for distribution have the clinical and analytical performance claimed in the authorized labeling.
- Q. If requested by FDA, you must submit lot release procedures to FDA, including sampling protocols, testing protocols, and acceptance criteria, that you use to release lots of your product for distribution in the U.S. If such lot release procedures are requested by FDA, you must provide it within 48 hours of the request.
- R. You must evaluate the analytical limit of detection and assess traceability of your product with any FDA-recommended reference material(s) if requested by FDA.<sup>10</sup>

<sup>10</sup> Traceability refers to tracing analytical sensitivity/reactivity back to an FDA-recommended reference material. FDA may request, for example, that you perform this study in the event that we receive reports of adverse events

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- After submission to and concurrence with the data by FDA, you must update your labeling to reflect the additional testing. Such labeling updates will be made in consultation with, and require concurrence of DMD/OHT7/OPEQ/CDRH.
- S. You must have a process in place to track adverse and report to FDA pursuant to 21 CFR Part 803.
- T. You must evaluate the impact of monkeypox viral mutations on your product's performance. Such evaluations must occur on an ongoing basis and must include any additional data analysis that is requested by FDA in response to any performance concerns you or FDA identify during routine evaluation. Additionally, if requested by FDA, you must submit records of these evaluations for FDA review within 48 hours of the request. If your evaluation identifies viral mutations that affect the stated expected performance of your device, you must notify FDA immediately (via email: CDRH-EUA-Reporting@fda.hhs.gov).
- U. If requested by FDA, you must update your labeling within 7 calendar days to include any additional labeling risk mitigations identified by FDA regarding the impact of viral mutations on test performance. Such updates will be made in consultation with, and require concurrence of, DMD/OHT7/OPEQ/CDRH.
- V. You must further evaluate the clinical performance of your product using natural clinical lesion swab specimens in VTM and/or UTM in an FDA agreed upon post authorization clinical evaluation study within 6 months of the date of this letter (unless otherwise agreed to with DMD/OHT7/OPEQ/CDRH). After submission to and concurrence with the data by FDA, you must update the authorized labeling to reflect the additional testing. Such labeling updates will be made in consultation with, and require concurrence of, DMD/OHT7/OPEQ/CDRH.
- W. You must complete FDA agreed upon post authorization specimen stability studies within 3 months of the date of this letter (unless otherwise agreed to with DMD/OHT7/OPEQ/CDRH). After submission of the study data, and review and concurrence with the data by FDA, you must update your product labeling to reflect the additional testing. Such labeling updates must be made in consultation with, and require concurrence of, DMD/OHT7/OPEQ/CDRH.
- X. You must submit to DMD/OHT7/OPEQ/CDRH within 3 months of the date of this letter your plan and anticipated timeline to establish and maintain a quality system that is appropriate for your product's design and manufacture, and that meets the requirements of either the 2016 edition of ISO 13485 or 21 CFR Part 820.

#### **Authorized Laboratories**

- Y. Authorized laboratories that receive your product must notify the relevant public health authorities of their intent to run your product prior to initiating testing.

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concerning your product.

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- Z. Authorized laboratories using your product must have a process in place for reporting test results to healthcare providers and relevant public health authorities, as appropriate.
- AA. Authorized laboratories using your product must include with test result reports, all authorized Fact Sheets. Under exigent circumstances, other appropriate methods for disseminating these Fact Sheets may be used, which may include mass media.
- BB. Authorized laboratories using your product must use your product as outlined in the authorized labeling. Deviations from the authorized procedures, including the authorized instruments, authorized extraction methods, authorized clinical specimen types, authorized control materials, authorized other ancillary reagents and authorized materials required to use your product are not permitted.
- CC. Authorized laboratories must have a process in place to track adverse events and report to you ([techservices@thermofisher.com](mailto:techservices@thermofisher.com); 1 800 955 6288) and to FDA pursuant to 21 CFR Part 803.
- DD. All laboratory personnel using your product must be appropriately trained in real-time PCR techniques and use appropriate laboratory and personal protective equipment when handling your product and use your product in accordance with the authorized labeling.

**Life Technologies Corporation (a part of Thermo Fisher Scientific Inc.) (You), Authorized Distributor(s) and Authorized Laboratories**

- EE. You, authorized distributor(s), and authorized laboratories must collect information on the performance of your product and must report any significant deviations from the established performance characteristics of your product of which they become aware to DMD/OHT7/OPEQ/CDRH (via email: [CDRH-EUA-Reporting@fda.hhs.gov](mailto:CDRH-EUA-Reporting@fda.hhs.gov)) In addition, authorized distributor(s) and authorized laboratories report to you ([techservices@thermofisher.com](mailto:techservices@thermofisher.com); 1 800 955 6288).
- FF. You, authorized distributor(s), and authorized laboratories using your product must ensure that any records associated with this EUA, are maintained until otherwise notified by FDA. Such records must be made available to FDA for inspection upon request.

**Conditions Related to Printed Materials, Advertising and Promotion**

- GG. All descriptive printed matter, advertising and promotional materials relating to the use of your product shall be consistent with the authorized labeling, as well as the terms set forth in this EUA and meet the requirements set forth in section 502(a), (q)(1), and (r) of the Act, as applicable, and FDA implementing regulations.
- HH. No descriptive printed matter, advertising or promotional materials relating to the use of your product may represent or suggest that this test is safe or effective for the detection of monkeypox virus or other non-variola orthopoxviruses.

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II. All descriptive printed matter, advertising and promotional materials relating to the use of your product shall clearly and conspicuously state that:

- This product has not been FDA cleared or approved, but has been authorized for emergency use by FDA under an EUA for use by the authorized laboratories;
- This product has been authorized only for the detection of nucleic acid from monkeypox virus or other non-variola orthopoxviruses, not for any other viruses or pathogens; and
- The emergency use of this product is only authorized for the duration of the declaration that circumstances exist justifying the authorization of emergency use of in vitro diagnostics for detection and/or diagnosis of infection with the monkeypox virus, including in vitro diagnostics that detect and/or diagnose infection with non-variola *Orthopoxvirus*, under Section 564(b)(1) of the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. § 360bbb-3(b)(1), unless the declaration is terminated or authorization is revoked sooner.

The emergency use of your product as described in this letter of authorization must comply with the conditions and all other terms of this authorization.

#### V. Duration of Authorization

This EUA will be effective until the declaration that circumstances exist justifying the authorization of the emergency use of in vitro diagnostics for detection and/or diagnosis of infection with the monkeypox virus, including in vitro diagnostics that detect and/or diagnose infection with non-variola *Orthopoxvirus*, is terminated under Section 564(b)(2) of the Act or the EUA is revoked under Section 564(g) of the Act.

Sincerely,

/s/

Namandjé N. Bumpus, Ph.D.  
Chief Scientist  
Food and Drug Administration

Enclosure

Dated: January 4, 2023.

**Lauren K. Roth,**

*Associate Commissioner for Policy.*

[FR Doc. 2023–00394 Filed 1–10–23; 8:45 am]

BILLING CODE 4164–01–C

#### DEPARTMENT OF HEALTH AND HUMAN SERVICES

#### Food and Drug Administration

[Docket No. FDA–2018–N–1203]

#### Prescription Drug User Fee Act of 2023 VII Meetings Program for Model-Informed Drug Development Approaches

**AGENCY:** Food and Drug Administration, HHS.

**ACTION:** Notice.

**SUMMARY:** The seventh iteration of the Prescription Drug User Fee Act (PDUFA VII), incorporated as part of the FDA User Fee Reauthorization Act of 2022, highlights the goal of advancing model-informed drug development (MIDD). The Food and Drug Administration (FDA or Agency) is announcing the continuation of the MIDD Paired Meeting Program that affords sponsors who are selected for participation the opportunity to meet with Agency staff to discuss MIDD approaches in medical product development. Meetings under the program will be conducted by FDA's Center for Drug Evaluation and Research (CDER) and Center for Biologics Evaluation and Research (CBER) during fiscal years 2023–2027. This program is being conducted to fulfill FDA's performance commitment under PDUFA

VII. For this program, MIDD is defined as the application of exposure-based, biological, and/or statistical models derived from non-clinical and clinical data sources to address drug development and/or regulatory issues (see **SUPPLEMENTARY INFORMATION, I. Background, and II. Eligibility and Selection for Participation** of this notice). For each approved proposal, the program consists of two meetings between sponsors or applicants and the relevant center that provide an opportunity for drug developers and FDA to discuss the application of MIDD approaches to the development and regulatory evaluation of medical products in development.

**DATES:** FDA will accept requests to participate in the program on a continuous basis beginning on October

1, 2022, through June 1, 2027. See section III of this notice for instructions about how to request participation in the program. Meeting-granted and -denied decisions will be made the last 2 weeks of each quarter of the fiscal year based on submissions received to date. Requesters will receive a meeting-granted or -denied notification no later than the second week of the new quarter.

The program will proceed from October 1, 2022, through September 30, 2027. The Agency will notify sponsors of proposals not selected for a given quarter. Sponsors who do not participate in the program may seek Agency interaction through existing channels (e.g., Type C meeting requests, critical path innovation meetings). The listed eligibility criteria and procedures outlined in this **Federal Register** notice reflect the current thinking at the time of publication. Processes may be revised and will be communicated as this program evolves. The most current program eligibility criteria and procedures may be found on the MIDD Program website: <https://www.fda.gov/drugs/development-resources/model-informed-drug-development-paired-meeting-program>.

**ADDRESSES:** Comments about this program can be submitted until February 10, 2023. You may submit comments about the MIDD meetings program as follows:

#### *Electronic Submissions*

Submit electronic comments in the following way:

- **Federal eRulemaking Portal:** <https://www.regulations.gov>. Follow the instructions for submitting comments. Comments submitted electronically, including attachments, to <https://www.regulations.gov> will be posted to the docket unchanged. Because your comment will be made public, you are solely responsible for ensuring that your comment does not include any confidential information that you or a third party may not wish to be posted, such as medical information, your or anyone else's Social Security number, or confidential business information, such as a manufacturing process. Please note that if you include your name, contact information, or other information that identifies you in the body of your comments, that information will be posted on <https://www.regulations.gov>.

- If you want to submit a comment with confidential information that you do not wish to be made available to the public, submit the comment as a written/paper submission and in the manner detailed (see "Written/Paper Submissions" and "Instructions").

#### *Written/Paper Submissions*

Submit written/paper submissions as follows:

- **Mail/Hand Delivery/Courier (for written/paper submissions):** Dockets Management Staff (HFA-305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.

- For written/paper comments submitted to the Dockets Management Staff, FDA will post your comment, as well as any attachments, except for information submitted, marked and identified, as confidential, if submitted as detailed in "Instructions."

**Instructions:** All submissions received must include the Docket No. FDA-2018-N-1203 for "Prescription Drug User Fee Act of 2023 VII Meetings Program for Model-Informed Drug Development Approaches." Received comments will be placed in the docket and, except for those submitted as "Confidential Submissions," publicly viewable at <https://www.regulations.gov> or at the Dockets Management Staff between 9 a.m. and 4 p.m., Monday through Friday, 240-402-7500.

- **Confidential Submissions—**To submit a comment with confidential information that you do not wish to be made publicly available, submit your comments only as a written/paper submission. You should submit two copies total. One copy will include the information you claim to be confidential with a heading or cover note that states "THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION." The Agency will review this copy, including the claimed confidential information, in its consideration of comments. The second copy, which will have the claimed confidential information redacted/blacked out, will be available for public viewing and posted on <https://www.regulations.gov>. Submit both copies to the Dockets Management Staff. If you do not wish your name and contact information to be made publicly available, you can provide this information on the cover sheet and not in the body of your comments and you must identify this information as "confidential." Any information marked as "confidential" will not be disclosed except in accordance with 21 CFR 10.20 and other applicable disclosure law. For more information about FDA's posting of comments to public dockets, see 80 FR 56469, September 18, 2015, or access the information at: <https://www.govinfo.gov/content/pkg/FR-2015-09-18/pdf/2015-23389.pdf>.

**Docket:** For access to the docket to read background documents or the electronic and written/paper comments received, go to [https://](https://www.regulations.gov)

[www.regulations.gov](https://www.regulations.gov) and insert the docket number, found in brackets in the heading of this document, into the "Search" box and follow the prompts and/or go to the Dockets Management Staff, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852, 240-402-7500.

#### **FOR FURTHER INFORMATION CONTACT:**

**CDER:** Yvonne Knight, Center for Drug Evaluation and Research, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 51, Rm. 2142, Silver Spring, MD 20993, 301-796-2133, [Yvonne.Knight@fda.hhs.gov](mailto:Yvonne.Knight@fda.hhs.gov) with the subject line "MIDD Meetings Program for CDER."

**CBER:** Christopher Egelebo, Center for Biologics Evaluation and Research, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 71, Rm. 5340, Silver Spring, MD 20993, 240-402-8625, [Christopher.Egelebo@fda.hhs.gov](mailto:Christopher.Egelebo@fda.hhs.gov) with the subject line "MIDD Meetings Program for CBER."

#### **SUPPLEMENTARY INFORMATION:**

##### **I. Background**

Under the FDA User Fee Reauthorization Act of 2022, FDA agreed, in accordance with the "PDUFA Reauthorization Performance Goals and Procedures Fiscal Years 2023 Through 2027: I. Ensuring the Effectiveness of the Human Drug Review, Part L. Enhancing Regulatory Decision Tools to Support Drug Development and Review" to provide information on how a sponsor can apply to participate in the MIDD Meetings Program (<https://www.fda.gov/media/151712/download>).

FDA will build on the success of the MIDD Paired Meeting Pilot under PDUFA VI by continuing to advance and integrate the development and application of exposure-based, biological, and statistical models derived from non-clinical and clinical data sources in drug development and regulatory review. FDA is announcing the continuation of this meeting program to satisfy the above-mentioned commitment and to facilitate the continued use of MIDD approaches. These approaches exclude statistical designs involving complex adaptations, Bayesian methods, or other features requiring computer simulations to determine the operating characteristics of a confirmatory clinical trial. MIDD approaches use a variety of quantitative methods to help balance the risks and benefits of drug products in development. When successfully applied, MIDD approaches can improve clinical trial efficiency, increase the probability of regulatory success, and optimize drug dosing/therapeutic individualization in the absence of dedicated trials.

The goal of the early meeting discussions granted under this program is to provide advice on how specific, proposed MIDD approaches can be used in a particular drug development program. FDA has committed to accepting one to two appropriate meeting requests quarterly each fiscal year. The meetings granted will include an initial and followup meeting on the same drug development issues. The second meeting will occur within approximately 60 days of receiving the briefing package.

## II. Eligibility and Selection for Participation in the MIDD Program

The sponsor should be a drug/biologics development company (interested consortia or software/device developer should come in partnership with a drug development company) and have an investigational new drug application (IND) or pre-IND (PIND) number for the relevant program. FDA welcomes submissions related to any relevant MIDD topics, such as:

- Dose selection or estimation (*e.g.*, for dose/dosing regimen selection or refinement)
- Clinical trial simulation (*e.g.*, based on drug-trial-disease models to inform the duration of a trial, select appropriate response measures, predict outcomes, etc.)
- Predictive or mechanistic safety evaluation (*e.g.*, use of systems pharmacology/mechanistic models for predicting safety or identifying critical biomarkers of interest)

## III. Procedures and Submission Information

### A. General Information

The MIDD program will be jointly administered by CDER's Office of Clinical Pharmacology, in the Office of Translational Sciences, which is the point of contact for all communications for CDER products, and CBER's Office of Biostatistics and Pharmacovigilance, which is the point of contact for all communications for CBER products.

### B. How To Submit a Meeting Request and Meeting Package

Meeting requests should be submitted electronically to the relevant application (*i.e.*, PIND, IND) with "MIDD Program Meeting Request for CDER" (CDER applications) or "MIDD Program Meeting Request for CBER" (CBER applications) in the subject line. Information about providing regulatory submissions in electronic format is available at: <https://www.fda.gov/drugs/development-approval-process-drugs/forms-submission-requirements>.

### C. Content and Format of the Meeting Request

Include the following information in the meeting request (no more than three to four pages):

1. Product name.
2. Application number.
3. Chemical name and structure.
4. Proposed indication(s) or context of product development.
5. A brief statement of the purpose and objectives of the meeting. The statement should include a brief background of the MIDD issues underlying the agenda.
6. MIDD approach(es) considered for the product under development and how MIDD can assess uncertainties about issues (*e.g.*, dosing, duration, patient selection) in a way that can inform regulatory decision-making.
7. A list of issues for discussion with the Agency about the specific MIDD proposed approach for the applicable drug development program.

### D. Content and Format of the Meeting Information Package

Sponsors whose meeting requests are granted as part of the program should submit a meeting information package electronically with "MIDD Program Meeting Package for CDER" (CDER applications) or "MIDD Program Meeting Package for CBER" (CBER applications) in the subject line no later than 47 days before the initial meeting and 60 days before the follow-up meeting. This meeting package should include the following information:

1. Product name.
2. Application number.
3. Chemical name and structure.
4. Proposed indications or context of product development.
5. Background section that includes a brief history of the development program and the events leading up to the meeting as well as the status of product development.
6. Proposed agenda, including estimated times needed for discussion of each agenda item.
7. List of questions for discussion along with a brief summary explaining the question of interest and the context of use for each question. State whether the model will be used to inform future trials, to provide mechanistic insight, or in lieu of a clinical trial.
8. The drug development issue (*e.g.*, dosing, clinical trial design, safety prediction, etc.), the proposed MIDD approach to the solution, information to support discussion (*e.g.*, a description of the data utilized for developing the models, model development, simulation plan, results), assessment of model risk,

and how the Agency can help guide any next steps relative to the regulatory decision-making process should be summarized and clearly articulated with any supporting data imperative to the discussion.

### E. Meeting Summaries

A meeting summary will be sent to the requester within 30 days of each meeting.

## IV. Paperwork Reduction Act of 1995

While this notice contains no collection of information, it does refer to previously approved FDA collections of information. Therefore, clearance by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501–3521) is not required for this notice. The previously approved collections of information are subject to review by OMB under the PRA. The collections of information pertaining to Prescription Drug User Fee Program have been approved under OMB control number 0910–0297. The collections of information for requesting meetings with FDA about drug development programs have been approved under OMB control number 0910–0001. The collections of information in 21 CFR part 312 for INDs and clinical trials have been approved under OMB control number 0910–0014. The collections of information in 21 CFR part 601 for biologics license applications have been approved under OMB control number 0910–0338.

Dated: January 5, 2023.

**Lauren K. Roth,**

*Associate Commissioner for Policy.*

[FR Doc. 2023–00389 Filed 1–10–23; 8:45 am]

**BILLING CODE 4164–01–P**

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### Food and Drug Administration

[Docket No. FDA–2018–N–3091]

### Advisory Committee; Cardiovascular and Renal Drugs Advisory Committee; Renewal; Correction

**AGENCY:** Food and Drug Administration, HHS.

**ACTION:** Notice; correction.

**SUMMARY:** The Food and Drug Administration is correcting a notice entitled "Advisory Committee; Cardiovascular and Renal Drugs Advisory Committee; Renewal" that appeared in the **Federal Register** of December 13, 2022. The document announced the renewal of the

Cardiovascular and Renal Drugs Advisory Committee. The document was published with the incorrect docket number. This document corrects that error.

**FOR FURTHER INFORMATION CONTACT:** Lisa Granger, Office of Policy, Planning, Legislation and International Affairs, Food and Drug Administration, 301–796–9115, [Lisa.Granger@fda.hhs.gov](mailto:Lisa.Granger@fda.hhs.gov).

**SUPPLEMENTARY INFORMATION:** In the *Federal Register* of Tuesday, December 13, 2022 (87 FR 76197), in FR Doc. 2022–27014, on page 76197 the following correction is made:

1. On page 76197, in the first column of the header of the document, “Docket No. FDA–2022–N–3091” is corrected to read “Docket No. FDA–2018–N–3091”.

Dated: January 3, 2023.

**Lauren K. Roth,**

*Associate Commissioner for Policy.*

[FR Doc. 2023–00390 Filed 1–10–23; 8:45 am]

**BILLING CODE 4164–01–P**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Health Resources and Services Administration**

**Agency Information Collection Activities: Proposed Collection: Public Comment Request; Information Collection Request Title: The National Health Service Corps and Nurse Corps Interest Capture Form—Revision**

**AGENCY:** Health Resources and Services Administration (HRSA), Department of Health and Human Services.

**ACTION:** Notice.

**SUMMARY:** In compliance with the requirement for opportunity for public comment on proposed data collection projects of the Paperwork Reduction Act of 1995, HRSA announces plans to submit an Information Collection Request (ICR), described below, to the Office of Management and Budget

(OMB). Prior to submitting the ICR to OMB, HRSA seeks comments from the public regarding the burden estimate, below, or any other aspect of the ICR.

**DATES:** Comments on this ICR should be received no later than March 13, 2023.

**ADDRESSES:** Submit your comments to [paperwork@hrsa.gov](mailto:paperwork@hrsa.gov) or mail the HRSA Information Collection Clearance Officer, Room 14N136B, 5600 Fishers Lane, Rockville, Maryland 20857.

**FOR FURTHER INFORMATION CONTACT:** To request more information on the proposed project or to obtain a copy of the data collection plans and draft instruments, email [paperwork@hrsa.gov](mailto:paperwork@hrsa.gov) or call Samantha Miller, the acting HRSA Information Collection Clearance Officer, at 301–594–4394.

**SUPPLEMENTARY INFORMATION:**

*Information Collection Request Title:* The National Health Service Corps (NHSC) and Nurse Corps Interest Capture Form OMB No. 0915–0337—Revision.

*Abstract:* The NHSC and the Nurse Corps Scholarship and Loan Repayment Programs of HRSA are both committed to improving the health of the nation’s underserved by uniting communities in need with caring health professionals and by supporting communities’ efforts to build better systems of care. The NHSC and Nurse Corps Interest Capture Form, which can be accessed on the HRSA website at <https://bhw.hrsa.gov/about-us/ask-question>, is an optional form that a health profession student, licensed clinician, faculty member, clinical site administrator, or other interested individual can complete and submit to HRSA online. The purpose of the form is to enable individuals and clinical sites to ask questions about the NHSC and/or Nurse Corps Scholarship and Loan Repayment Programs, and to provide their contact information so that HRSA may provide them with periodic program updates and other general information via email. Completed forms will contain information such as the names and roles of the individual(s),

their phone number(s) and email address(es), and the HRSA program(s) in which they are interested or about which they have questions.

The revisions in this ICR are as follows:

a. The discontinuation of the print version of the NHSC and Nurse Corps Interest Capture Form, previously used by HRSA staff for sharing program information with health profession students and providers at national and regional conferences and campus recruiting events.

b. The addition of an online version of the NHSC and Nurse Corps Interest Capture Form, located on the HRSA website at <https://bhw.hrsa.gov/about-us/ask-question>.

*Need and Proposed Use of the Information:* The need and purpose of this information collection is to share resources and information regarding the NHSC and Nurse Corps Scholarship and Loan Repayment Programs with interested HRSA website ([hrsa.gov](https://hrsa.gov)) visitors.

*Likely Respondents:* Individuals and potential service sites interested in the NHSC or Nurse Corps Scholarship and Loan Repayment Programs.

*Burden Statement:* Burden in this context means the time expended by persons to generate, maintain, retain, disclose, or provide the information requested. This includes the time needed to review instructions; to develop, acquire, install, and utilize technology and systems for the purpose of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; to train personnel and to be able to respond to a collection of information; to search data sources; to complete and review the collection of information; and to transmit or otherwise disclose the information. The total annual burden hours estimated for this ICR are summarized in the table below.

**TOTAL ESTIMATED ANNUALIZED BURDEN HOURS**

Form name	Number of respondents	Number of responses per respondent	Total responses	Average burden per response (in hours)	Total burden hours
NHSC and Nurse Corps Interest Capture Form .....	16,144	1	16,144	.025	404
Total .....	16,144	.....	16,144	.....	404

Amy P. McNulty,

Deputy Director, Executive Secretariat.

[FR Doc. 2023-00219 Filed 1-10-23; 8:45 am]

BILLING CODE 4165-15-P

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### Invitation To Become a National Youth Sports Strategy Champion

**AGENCY:** Office of Disease Prevention and Health Promotion, Office of the Assistant Secretary for Health, Office of the Secretary, Department of Health and Human Services.

**ACTION:** Notice.

**SUMMARY:** The Office of Disease Prevention and Health Promotion (ODPHP) invites public and private sector organizations that support the *National Youth Sports Strategy* (NYSS) to become a National Youth Sports Strategy Champion (NYSS Champion). NYSS Champions will receive recognition from ODPHP and the President's Council on Sports, Fitness, and Nutrition (PCSFN) on *Health.gov*, a digital NYSS Champion badge to highlight their support of the NYSS, and tools to disseminate the NYSS and promote physical activity.

**DATES:** Online applications will be accepted starting on January 11, 2023 and will be reviewed on a rolling basis.

**ADDRESSES:** Interested organizations are invited to submit an online NYSS Champion application, which can be found at: <https://health.gov/our-work/nutrition-physical-activity/national-youth-sports-strategy/nyss-champions/become-nyss-champion>. Questions about NYSS Champions may be emailed to [sports@hhs.gov](mailto:sports@hhs.gov).

**FOR FURTHER INFORMATION CONTACT:**

Katrina L. Piercy, Ph.D., R.D., Office of Disease Prevention and Health Promotion (ODPHP), Office of the Assistant Secretary for Health (OASH), U.S. Department of Health and Human Services (HHS); 1101 Wootton Parkway, Suite 420; Rockville, MD 20852; Telephone: (240) 276-9578. Email: [sports@hhs.gov](mailto:sports@hhs.gov).

**SUPPLEMENTARY INFORMATION:**

**Background:** On behalf of the U.S. Department of Health and Human Services (HHS), ODPHP leads the development and implementation of the Physical Activity Guidelines for Americans and the National Youth Sports Strategy and manages the PCSFN. The PCSFN is the only federal advisory committee focused solely on the promotion of physical activity, fitness, sports, and nutrition.

HHS released the NYSS in September 2019 in response to Executive Order 13824. ODPHP led the development of the NYSS, in collaboration with the Centers for Disease Control and Prevention and the National Institutes of Health, and with recommendations from the PCSFN. The NYSS aims to unite U.S. youth sports culture around a shared vision: that one day, all youth will have the opportunity, motivation, and access to play sports. The NYSS specifically outlines steps for everyone to take action and help improve the youth sports landscape in the United States. A framework for understanding youth sports participation highlights opportunities and action items for youth, adults, organizations, communities, and public agencies ([https://health.gov/sites/default/files/2019-10/NYSS\\_ExecutiveSummary.pdf](https://health.gov/sites/default/files/2019-10/NYSS_ExecutiveSummary.pdf)). NYSS Champion organizations are working toward the NYSS vision and are promoting and supporting youth sports, particularly in underserved populations.

**Requirements of Interested Organizations:** ODPHP invites organizations that support youth sports and that demonstrate efforts toward improving the youth sports landscape in the United States to apply online to become an NYSS Champion. The online application is available at: <https://health.gov/our-work/nutrition-physical-activity/national-youth-sports-strategy/nyss-champions/become-nyss-champion>. Participating organizations will sign a Partnership Agreement and Trademark License (Agreement) to outline the terms and parameters of their support for the NYSS. Organizations with an active Agreement will be granted use of the digital NYSS Champion badge as long as the organization continues to work in alignment with the NYSS. Use of the NYSS Champion badge does not imply any federal endorsement of the collaborating organization's general policies, activities, or products.

**Eligibility for Interested Organizations:** To be eligible to become an NYSS Champion, an organization shall: (1) have a demonstrated interest in, understanding of, and experience with supporting youth sports; (2) have an organizational or corporate mission that is aligned with the NYSS vision; and (3) agree to sign an Agreement with ODPHP, which will set forth the details of how the organization is supporting the vision of the NYSS.

**Application Requirements:** Organizations may apply to be an NYSS Champion. Organizations should complete a NYSS Champion application located at: [\[nutrition-physical-activity/national-youth-sports-strategy/nyss-champions/become-nyss-champion\]\(https://health.gov/our-work/nutrition-physical-activity/national-youth-sports-strategy/nyss-champions/become-nyss-champion\) and describe in their application their support of the NYSS vision that one day, all youth will have the opportunity, motivation, and access to play sports. Each NYSS Champion application shall contain:](https://health.gov/our-work/</a></p>
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(1) organization name, location, website, and submitter's contact information;

(2) a brief description of the organization's mission and/or values; and

(3) a description of how the organization supports or plans to support the NYSS vision, such as prioritizing underserved populations, donating funds or equipment, or alignment with specific opportunities and action items outlined in the NYSS ([https://health.gov/sites/default/files/2019-10/NYSS\\_ExecutiveSummary.pdf](https://health.gov/sites/default/files/2019-10/NYSS_ExecutiveSummary.pdf)).

Submission of an application does not guarantee acceptance as an NYSS Champion. ODPHP will review and evaluate applications for alignment with the NYSS vision.

Paul Reed,

Deputy Assistant Secretary for Health, Office of Disease Prevention and Health Promotion.

[FR Doc. 2023-00378 Filed 1-10-23; 8:45 am]

BILLING CODE 4150-32-P

## DEPARTMENT OF HOMELAND SECURITY

### Transportation Security Administration

#### Revision of Agency Information Collection Activity Under OMB Review: TSA Reimbursable Screening Services Program (RSSP) Pilot Request

**AGENCY:** Transportation Security Administration, DHS.

**ACTION:** 30-Day notice.

**SUMMARY:** This notice announces that the Transportation Security Administration (TSA) has forwarded the Information Collection Request (ICR), Office of Management and Budget (OMB) control number 1652-0073, abstracted below, to OMB for review and approval for a revision of the currently approved collection under the Paperwork Reduction Act (PRA). The ICR describes the nature of the information collection and its expected burden. The collection involves public and private entities requesting participation in TSA's Reimbursable Screening Services Program (RSSP), currently a pilot program for up to eight locations, to obtain TSA security screening services outside of an existing primary passenger airport terminal



screening area where screening services are currently provided or would be eligible to be provided under TSA's annually appropriated passenger screening program.

**DATES:** Send your comments by February 10, 2023. A comment to OMB is most effective if OMB receives it within 30 days of publication.

**ADDRESSES:** Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain). Find this particular information collection by selecting "Currently under Review—Open for Public Comments" and by using the find function.

**FOR FURTHER INFORMATION CONTACT:** Christina A. Walsh, TSA PRA Officer, Information Technology (IT), TSA-11, Transportation Security Administration, 6595 Springfield Center Drive, Springfield, VA 20598-6011; telephone (571) 227-2062; email [TSAPRA@tsa.dhs.gov](mailto:TSAPRA@tsa.dhs.gov).

**SUPPLEMENTARY INFORMATION:** TSA published a **Federal Register** notice, with a 60-day comment period soliciting comments, of the following collection of information on June 21, 2022, 87 FR 36868.

#### Comments Invited

In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*), an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. The ICR documentation will be available at <https://www.reginfo.gov> upon its submission to OMB. Therefore, in preparation for OMB review and approval of the following information collection, TSA is soliciting comments to—

(1) Evaluate whether the proposed information requirement is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(2) Evaluate the accuracy of the agency's estimate of the burden;

(3) Enhance the quality, utility, and clarity of the information to be collected; and

(4) Minimize the burden of the collection of information on those who are to respond, including using appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

#### Information Collection Requirement

*Title:* TSA Reimbursable Screening Services Program (RSSP) Pilot Request.

*Type of Request:* Revision of a currently approved collection.

*OMB Control Number:* 1652-0073.

*Form(s):* NA.

*Affected Public:* Public or private entities regulated by TSA.

*Abstract:* The RSSP is authorized by section 225, Division A, of the Consolidated Appropriations Act, 2019, Public Law 116-6, 133 Stat. 13 (Feb. 15, 2019), as amended by the Consolidated Appropriations Act, 2021, Section 223, Division F, Public Law 116-260, 134 Stat. 1459 (Dec. 27, 2020), and as amended by the Consolidated Appropriations Act, 2023, Section 222, Division F, Public Law 117-328 (Dec. 29, 2022) to extend RSSP through 2025. Under this provision, TSA may establish a pilot for public or private entities regulated by TSA to request reimbursable screening services outside of an existing primary passenger terminal screening area where screening services are currently provided or eligible to be provided under TSA's annually appropriated passenger screening program. For purposes of section 225, "screening services" means "the screening of passengers, flight crews, and their carry-on baggage and personal articles, and may include checked baggage screening if that type of screening is performed at an offsite location that is not part of a passenger terminal of a commercial airport." TSA is collecting this information to enable public and private entities regulated by TSA to request screening services under the RSSP.

TSA is revising the title of OMB control number 1652-0073 from "*TSA Reimbursable Screening Services Program Request*" to "*TSA Reimbursable Screening Services Program Pilot Request*" to more accurately represent the information collection.

*Number of Respondents:* 15.

*Estimated Annual Burden Hours:* An estimated 492 hours annually.

Dated: January 5, 2023.

**Christina A. Walsh,**

*TSA Paperwork Reduction Act Officer,  
Information Technology.*

[FR Doc. 2023-00316 Filed 1-10-23; 8:45 am]

**BILLING CODE 9110-05-P**

#### DEPARTMENT OF THE INTERIOR

##### Fish and Wildlife Service

[Docket No. FWS-R2-ES-2022-N072; FXES1113020000-223-FF02ENEH00]

##### Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Status Reviews of 31 Species in the Southwest

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Notice of initiation of reviews; request for information.

**SUMMARY:** We, the U.S. Fish and Wildlife Service, are conducting 5-year status reviews under the Endangered Species Act, of 31 animal and plant species. A 5-year status review is based on the best scientific and commercial data available at the time of the review; therefore, we are requesting submission of any such information that has become available since the last review for the species.

**DATES:** To ensure consideration, we are requesting submission of new information no later than February 10, 2023. However, we will continue to accept new information about any listed species at any time.

**ADDRESSES:** For details on how to request or submit information, see Request for Information and How Do I Ask Questions or Provide Information? in the **SUPPLEMENTARY INFORMATION** section.

**FOR FURTHER INFORMATION CONTACT:** For information on a particular species, contact the appropriate person or office listed in the table in the **SUPPLEMENTARY INFORMATION** section. For general information, contact Beth Forbus, by telephone at 505-248-6681; or by email at [Beth\\_Forbus@fws.gov](mailto:Beth_Forbus@fws.gov). Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

##### **SUPPLEMENTARY INFORMATION:**

##### **Why do we conduct 5-year reviews?**

Under the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C. 1531 *et seq.*), we maintain Lists of Endangered and Threatened Wildlife and Plants (which we collectively refer to as the List) in the Code of Federal Regulations (CFR) at 50 CFR 17.11 (for animals) and 17.12 (for plants). Section

4(c)(2)(A) of the ESA requires us to review each listed species' status at least once every 5 years. Our regulations at 50 CFR 424.21 require that we publish a notice in the **Federal Register** announcing those species under active review. For additional information about 5-year status reviews, refer to our factsheet at <https://www.fws.gov/overview/what-we-do/recovery-overview.html>.

**What information do we consider in our review?**

A 5-year status review considers all new information available at the time of the review. In conducting these reviews,

we consider the best scientific and commercial data that have become available since the listing determination or most recent status review, such as:

(A) Species biology, including but not limited to population trends, distribution, abundance, demographics, and genetics;

(B) Habitat conditions, including but not limited to amount, distribution, and suitability;

(C) Conservation measures that have been implemented that benefit the species;

(D) Threat status and trends in relation to the five listing factors (as

defined in section 4(a)(1) of the ESA); and

(E) Other new information, data, or corrections, including but not limited to taxonomic or nomenclatural changes, identification of erroneous information contained in the List, and improved analytical methods.

Any new information will be considered during the 5-year status review and will also be useful in evaluating the ongoing recovery programs for the species.

**Which species are under review?**

The species in the following table are under active 5-year status review.

Common name	Scientific name	Listing status	Current range	Final listing rule (Federal Register citation and publication date)	Contact person, phone, email	Contact person's U.S. mail address
<b>ANIMALS</b>						
Houston toad .....	<i>Bufo houstonensis</i>	Endangered ...	Texas .....	35 FR 16047 10/13/1970.	Field Supervisor, 512-490-0057 (phone).	U.S. Fish and Wildlife Service, Austin Ecological Services Office, 10711 Burnet Road, Suite 200, Austin, TX 78758.
Phantom tryonia .....	<i>Tryonia cheatumi</i> ..	Endangered ...	Texas .....	78 FR 41227 7/9/2013.		
Phantom springsnail ..	<i>Pyrgulopsis texana</i>	Endangered ...	Texas .....	78 FR 41227 7/9/2013.		
Tooth Cave spider .....	<i>Tayshaneta myopica</i> .	Endangered ...	Texas .....	53 FR 36029 9/16/1988.		
Tooth Cave pseudoscorpion.	<i>Tartarocreagris texana</i> .	Endangered ...	Texas .....	53 FR 36029 9/16/1988.		
Bone Cave harvestman.	<i>Texella reyesi</i> .....	Endangered ...	Texas .....	53 FR 36029 9/16/1988.		
Bee Creek Cave harvestman.	<i>Texella reddelli</i> .....	Endangered ...	Texas .....	53 FR 36029 9/16/1988.		
Tooth Cave ground beetle.	<i>Rhadine persephone</i> .	Endangered ...	Texas .....	53 FR 36029 9/16/1988.		
Kretschmarr Cave mold beetle.	<i>Texamaurops reddelli</i> .	Endangered ...	Texas .....	53 FR 36029 9/16/1988.		
Coffin Cave mold beetle.	<i>Batrisodes texanus</i>	Endangered ...	Texas .....	53 FR 36029 9/16/1988.		
Diminutive amphipod	<i>Gammarus hyalleloides</i> .	Endangered ...	Texas .....	78 FR 41227 7/9/2013.		
Big Bend gambusia ...	<i>Gambusia gaigei</i> ..	Endangered ...	Texas .....	32 FR 4001 3/11/1967.		
Pecos gambusia .....	<i>Gambusia nobilis</i> ..	Endangered ...	New Mexico and Texas.	35 FR 16047 10/13/1970.		
Texas hornshell .....	<i>Popenaias popeii</i> ..	Endangered ...	New Mexico and Texas.	83 FR 5720 3/12/2018.	Field Supervisor, 281-286-8282 (phone) or <a href="mailto:HoustonESFO@fws.gov">HoustonESFO@fws.gov</a> (email).	U.S. Fish and Wildlife Service, Texas Coastal Ecological Services Field Office, 17629 El Camino Real, Suite 211, Houston, TX 77058.
Ouachita rock pocketbook.	<i>Arcidens wheeleri</i>	Endangered ...	Arkansas and Oklahoma.	56 FR 54950 10/23/1991.	Field Office Supervisor, 918-581-7458 (phone), or <a href="mailto:OKProjectReview@fws.gov">OKProjectReview@fws.gov</a> (email).	U.S. Fish and Wildlife Service, Oklahoma Ecological Services Field Office, 9014 East 21st Street, Tulsa, OK 74129.
Rio Grande silvery minnow.	<i>Hybognathus amarus</i> .	Endangered ...	New Mexico and Texas.	59 FR 36988 7/20/1994.	Field Supervisor, 505-346-2525 (phone) or <a href="mailto:nmesfo@fws.gov">nmesfo@fws.gov</a> (email).	U.S. Fish and Wildlife Service, 2105 Osuna Rd. NE, Albuquerque, NM 87113-1001.
		Experimental, Non-essential.	Texas .....		Field Supervisor, 512-490-0057 (phone).	U.S. Fish and Wildlife Service, Austin Ecological Services Office, 10711 Burnet Road, Suite 200, Austin, TX 78758.
Jemez Mountains salamander.	<i>Plethodon neomexicanus</i> .	Endangered ...	New Mexico .....	78 FR 55599 9/10/2013.	Field Supervisor, 505-346-2525 (phone) or <a href="mailto:nmesfo@fws.gov">nmesfo@fws.gov</a> (email).	U.S. Fish and Wildlife Service, 2105 Osuna Rd. NE, Albuquerque, NM 87113-1001.

Common name	Scientific name	Listing status	Current range	Final listing rule (Federal Register citation and publication date)	Contact person, phone, email	Contact person's U.S. mail address
Alamosa springsnail ..	<i>Tryonia alamosae</i>	Endangered ...	New Mexico .....	56 FR 58664 9/30/1991.	Field Supervisor, 602–242–0210 (phone) or <i>incomingazcorr@fws.gov</i> (email).	U.S. Fish and Wildlife Service, Arizona Ecological Services Office, 9828 North 31st Avenue, #C3, Phoenix, AZ 85051–2517.
Little Colorado spinedace.	<i>Lepidomeda vittata</i>	Threatened ....	Arizona .....	32 FR 4001 3/11/1967.		
Sonoran pronghorn ....	<i>Antilocapra americana sonoriensis</i> .	Endangered ... Experimental, Non-essential.	Arizona .....	32 FR 4001 3/11/1967. 76 FR 25593 5/5/2011.		

PLANTS

Kuenzler hedgehog cactus.	<i>Echinocereus fendleri</i> var. <i>kuenzleri</i> .	Threatened ....	New Mexico and Texas.	44 FR 61924 11/28/1979.	Field Supervisor, 505–346–2525 (phone) or <i>nmesfo@fws.gov</i> (email).	U.S. Fish and Wildlife Service, 2105 Osuna Rd. NE, Albuquerque, NM 87113–1001.
Lee pincushion cactus	<i>Coryphantha sneedii</i> var. <i>leei</i> .	Threatened ....	New Mexico .....	44 FR 61554 11/26/1979.		
Sneed pincushion cactus.	<i>Coryphantha sneedii</i> var. <i>sneedii</i> .	Threatened ....	New Mexico and Texas.	44 FR 64741 12/7/1979.	Field Supervisor, 602–242–0210 (phone) or <i>incomingazcorr@fws.gov</i> (email).	U.S. Fish and Wildlife Service, Arizona Ecological Services Office, 9828 North 31st Avenue, #C3, Phoenix, AZ 85051–2517.
Pecos sunflower .....	<i>Helianthus paradoxus</i> .	Threatened ....	New Mexico and Texas.	64 FR 56583 10/20/1999.		
Acuna cactus .....	<i>Echinomastus erectocentrus</i> var. <i>acunensis</i> .	Endangered ...	Arizona .....	78 FR 60607 10/31/2013.		
Navajo sedge .....	<i>Carex specuicola</i> ..	Threatened ....	Arizona and Utah .....	50 FR 19370 5/8/1985.	Field Supervisor, 281–286–8282 (phone) or <i>HoustonESFO@fws.gov</i> (email).	U.S. Fish and Wildlife Service, Texas Coastal Ecological Services Field Office, 17629 El Camino Real, Suite 211, Houston, TX 77058.
White bladderpod .....	<i>Physaria pallida</i> ....	Endangered ...	Texas .....	44 FR 64738 10/26/1979.		
Zapata bladderpod ....	<i>Physaria thamnophila</i> .	Endangered ...	Texas .....	53 FR 37975 9/28/1988.	Field Supervisor, 602–242–0210 (phone) or <i>incomingazcorr@fws.gov</i> (email).	U.S. Fish and Wildlife Service, Arizona Ecological Services Office, 9828 North 31st Avenue, #C3, Phoenix, AZ 85051–2517.
Texas trailing phlox ...	<i>Phlox nivalis</i> ssp. <i>texensis</i> .	Endangered ...	Texas .....	47 FR 19539 5/6/1982.		
Lloyd's mariposa cactus.	<i>Sclerocactus mariposensis</i> .	Threatened ....	Texas .....	44 FR 64347 12/6/1979.		
Guadalupe fescue .....	<i>Festuca ligulata</i> ....	Endangered ...	Texas .....	82 FR 42245 10/10/2017.		

Request for Information

To ensure that a 5-year status review is complete and based on the best available scientific and commercial information, we request new information from all sources. See What Information Do We Consider in Our Review? for specific criteria. If you submit information, please support it with documentation such as maps, bibliographic references, methods used to gather and analyze the data, and/or copies of any pertinent publications, reports, or letters by knowledgeable sources.

How do I ask questions or provide information?

If you wish to provide information for any species listed above, please submit your comments and materials to the appropriate contact in the table above. You may also direct questions to those

contacts (also see **FOR FURTHER INFORMATION CONTACT**).

Public Availability of Comments

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Completed and Active Reviews

A list of all completed and currently active 5-year status reviews can be found at <https://ecos.fws.gov/ecp/report/species-five-year-review>.

Authority

This document is published under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.).

Amy L. Lueders,

Regional Director, Southwest Region, U.S. Fish and Wildlife Service.

[FR Doc. 2023–00383 Filed 1–10–23; 8:45 am]

BILLING CODE 4333–15–P

**DEPARTMENT OF AGRICULTURE**

**Forest Service**

**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

[FWS-R7-SM-2022-N037; FF07J00000 FXRS12610700000 234]

**Alaska Subsistence Regional Advisory Council Meetings for 2023**

**AGENCY:** Forest Service, USDA, Fish and Wildlife Service, Interior.

**ACTION:** Notice of meetings.

**SUMMARY:** The Federal Subsistence Board (Board) announces the public meetings of the 10 Alaska Subsistence Regional Advisory Councils (Councils) for the winter and fall cycles of 2023. The Councils each meet approximately twice a year to provide advice and recommendations to the Board about subsistence hunting and fishing issues on Federal public lands in Alaska.

**DATES:**

*Winter 2023 Meetings:* The Alaska Subsistence Regional Advisory Councils

will meet between February 22, 2023, and April 6, 2023, as shown in table 1. A teleconference will substitute for an in-person meeting if public health or safety restrictions are in effect. For more information about accessing the meetings, including start times and whether the meetings will be in person or via teleconference, visit the Federal Subsistence Management Program website, at <https://www.doi.gov/subsistence/regions>.

TABLE 1—WINTER 2023 MEETINGS OF THE ALASKA SUBSISTENCE REGIONAL ADVISORY COUNCILS

Regional Advisory Council	Dates	Location (if in person)
Southeast Alaska—Region 1 .....	February 28–March 2 .....	Juneau.
Southcentral Alaska—Region 2 .....	March 15–16 .....	Anchorage.
Kodiak/Aleutians—Region 3 .....	March 29–30 .....	Kodiak.
Bristol Bay—Region 4 .....	March 8–9 .....	Naknek.
Yukon-Kuskokwim Delta—Region 5 .....	April 4–6 .....	St. Mary's.
Western Interior—Region 6 .....	April 4–5 .....	Aniak.
Seward Peninsula—Region 7 .....	March 22–23 .....	Nome.
Northwest Arctic—Region 8 .....	March 6–7 .....	Kotzebue.
Eastern Interior—Region 9 .....	March 1–2 .....	Arctic Village.
North Slope—Region 10 .....	February 22–23 .....	Kaktovik.

*Fall 2023 Meetings:* The Alaska Subsistence Regional Advisory Councils will meet between September 19, 2023, and November 2, 2023, as shown in

table 2. A teleconference will substitute for an in-person meeting if public health or safety restrictions are in effect. For more information about accessing the

meetings, including start times and whether meetings will be in person or via teleconference, visit <https://www.doi.gov/subsistence/regions>.

TABLE 2—FALL 2023 MEETINGS OF THE ALASKA SUBSISTENCE REGIONAL ADVISORY COUNCILS

Regional Advisory Council	Dates	Location (if in person)
Southeast Alaska—Region 1 .....	October 24–26 .....	Sitka.
Southcentral Alaska—Region 2 .....	October 2–3 .....	Kenai.
Kodiak/Aleutians—Region 3 .....	September 19–20 .....	King Cove.
Bristol Bay—Region 4 .....	October 24–25 .....	Dillingham.
Yukon-Kuskokwim Delta—Region 5 .....	October 10–12 .....	Anchorage.
Western Interior—Region 6 .....	October 11–12 .....	Fairbanks.
Seward Peninsula—Region 7 .....	November 1–2 .....	Nome.
Northwest Arctic—Region 8 .....	October 16–17 .....	Kotzebue.
Eastern Interior—Region 9 .....	October 4–5 .....	Tok.
North Slope—Region 10 .....	November 1–2 .....	Utqiagvik.

All meetings are open to the public. For more information, see **FOR FURTHER INFORMATION CONTACT**, below.

**ADDRESSES:** Specific information about meeting locations and the final agendas can be found at <https://www.doi.gov/subsistence/regions>.

**FOR FURTHER INFORMATION CONTACT:** Chair, Federal Subsistence Board, c/o U.S. Fish and Wildlife Service; Attention: Sue Detwiler, Assistant Regional Director, Office of Subsistence Management; (907) 786–3888 (phone) or [subsistence@fws.gov](mailto:subsistence@fws.gov) (email). For questions specific to National Forest System lands, contact Gregory Risdahl,

Subsistence Program Leader, (907) 302–7354 (phone) or [gregory.risdahl@usda.gov](mailto:gregory.risdahl@usda.gov) (email). Individuals in the United States who are deaf, blind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

*Reasonable Accommodations:* The Federal Subsistence Board is committed to providing access to these meetings for all participants. Please make requests in

advance for sign language interpreter services, assistive listening devices, or other reasonable accommodations. Please make requests to Katerina Wessels, (907) 786–3885 (phone), [katerina\\_wessels@fws.gov](mailto:katerina_wessels@fws.gov) (email), at least 7 business days prior to the meeting you would like to attend to give the U.S. Fish and Wildlife Service sufficient time to process your request. All reasonable accommodation requests are managed on a case-by-case basis.

**SUPPLEMENTARY INFORMATION:** The Federal Subsistence Board (Board) announces the 2023 public meeting schedule for the 10 Alaska Subsistence

Regional Advisory Councils (Councils), in accordance with the Federal Advisory Committee Act (5 U.S.C. Appendix 2). Established in 1993, the Councils are statutory Federal advisory committees that provide a public forum for their regions and recommendations to the Federal Subsistence Board about subsistence hunting, trapping, and fishing issues on Federal public lands in Alaska, as authorized by section 805 of the Alaska National Interest Lands Conservation Act (ANILCA; 16 U.S.C. 3111–3126).

The Councils are a crucial link between federally qualified subsistence users and the Board. The Board is a multi-agency body with representation from a chair and two public members who are appointed by the Secretary of the Interior with the concurrence of the Secretary of Agriculture. The Board includes representatives of the U.S. Fish and Wildlife Service, National Park Service, Bureau of Land Management, Bureau of Indian Affairs, and U.S. Forest Service.

Each Council meets approximately two times per calendar year, once in the winter and once in the fall, to attend to business and develop proposals and recommendations to the Board.

### Meeting Agendas

#### Winter Meetings

- *General Council business:* Review and adoption of agenda; election of officers; review and approval of previous meeting minutes; Council Chair and members reports; public and Tribal comments on non-agenda items.

- Develop proposals and accept public comments on potential changes to regulations for subsistence take of wildlife.

- Review and approve Annual Report.

- Review and propose changes to the Council charter.

- Agency, Tribal governments, State of Alaska, and non-governmental organizations reports.

- Future meeting dates.

#### Fall Meetings

- *General Council business:* Review and adoption of agenda; review and approval of previous meeting minutes; Council Chair and members reports; public and Tribal comments on non-agenda items.

- Prepare recommendations and accept public comments on proposals to change subsistence take of wildlife regulations and review and prepare recommendations on wildlife closures.

- Define issues for upcoming Annual Report.

- Develop priority information needs for the Fisheries Resource Monitoring Program.

- Agency, Tribal governments, State of Alaska, and non-governmental organizations Tribal governments, and Native organizations reports.

- Future meeting dates.

A notice will be published with specific dates, times, and meeting locations in local and statewide newspapers prior to both series of meetings; in addition, announcements will be made on local radio stations and posted on social media and the Federal Subsistence Management Program website (<https://www.doi.gov/subsistence/regions>). Locations and dates may change based on weather or local circumstances. A teleconference will substitute for an in-person meeting if public health or safety restrictions are in effect. The final draft agendas, call-in numbers, instructions on how to participate and provide public comments, and other related meeting information will be posted on the Federal Subsistence Management Program website and on social media at <https://www.facebook.com/subsistencalaska/>. Transcripts of the meetings are maintained by the program and will be available for public inspection within 14 days after each meeting at <https://www.doi.gov/subsistence/regions>.

### Public Submission of Comments

Time will be allowed for any individual or organization wishing to present oral or written comments. If you are not available to submit your comments, you may have another party present your comments on your behalf. Any written comments received will be presented to the Council members by staff.

### Public Availability of Comments

Before including your address, phone number, email address, or other personal identifiable information in your comment, you should be aware that your entire comment—including your personal identifiable information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifiable information from public review, we cannot guarantee that we will be able to do so.

(Authority: 5 U.S.C. Appendix 2.)

**Sue Detwiler,**

*Assistant Regional Director, U.S. Fish and Wildlife Service.*

**Bridget Darr,**

*Director of Natural Resources, USDA–Forest Service.*

[FR Doc. 2023–00339 Filed 1–10–23; 8:45 am]

**BILLING CODE 3411–15–P; 4333–15–P**

## DEPARTMENT OF THE INTERIOR

### Geological Survey

[GX23GH009980000.GA00EZ5]

### Request for Nominations for Members To Serve on the National Volcano Early Warning System Advisory Committee

**AGENCY:** U.S. Geological Survey, Department of the Interior.

**ACTION:** Request for Nominations.

**SUMMARY:** The Department of the Interior (DOI) is seeking nominations to serve on the National Volcano Early Warning System Advisory Committee (NVEWSAC). The NVEWSAC will assist the Secretary in implementing the National Volcano Early Warning and Monitoring System (NVEWS) and provide an annual report to the Secretary that describes its activities and related scientific research.

**DATES:** Nominations for the NVEWSAC must be received by February 6, 2023.

**ADDRESSES:** NVEWSAC nominations can be sent to Dr. Charles Mandeville at [cmandeville@usgs.gov](mailto:cmandeville@usgs.gov). Additional information about NVEWSAC may be found at National Volcano Early Warning System Advisory Committee (NVEWSAC) ([usgs.gov](https://usgs.gov)).

**FOR FURTHER INFORMATION CONTACT:** Inquiries regarding NVEWSAC can be directed to Dr. Charles Mandeville, Volcano Hazards Program Coordinator and Designated Federal Officer (DFO), [cmandeville@usgs.gov](mailto:cmandeville@usgs.gov), 571–286–2304.

**SUPPLEMENTARY INFORMATION:** The NVEWSAC is established under Title V of the John Dingell Jr., Conservation, Management and Recreation Act, March 12, 2019 (Pub. L. 116–9) and is regulated by the Federal Advisory Committee Act (FACA). The NVEWSAC assists the Secretary in implementing NVEWS and provides an annual report to the Secretary that describes its activities and related scientific research. The NVEWSAC includes up to 30 members and will meet 1–2 times per year.

Membership will be comprised of representatives from Federal Agencies and non-Federal experts who are qualified physical scientists, natural

scientists, volcanologists, geochemists, atmospheric scientists, meteorologists, engineers, remote-sensing scientists, hydrologists, and information technologists. Non-Federal experts will be appointed as Special Government Employees (SGEs). Individuals may also be selected from state and local governments, academia, and the volcano science community, who will be appointed as representative members of those organizations.

Please be aware that applicants selected to serve as SGEs will be required, prior to appointment, to file a Confidential Financial Disclosure Report in order to avoid involvement in real or apparent conflicts of interest. You may find a copy of the Confidential Financial Disclosure Report at the following website: <https://www.doi.gov/ethics/special-government-employees/financial-disclosure>. Additionally, after appointment, members appointed as SGEs will be required to meet applicable financial disclosure and ethics training requirements. Please contact 202–208–7960 or [DOI\\_Ethics@sol.doi.gov](mailto:DOI_Ethics@sol.doi.gov) with any questions about the ethics requirements for members appointed as SGEs.

Nominees should have established records of distinguished service, be familiar with relevant areas of geology, volcanology, geography, hydrology, atmospheric science/meteorology, ecology, and related fields and have at least a general familiarity with U.S. Geological Survey programmatic activities relating to its participation in NVEWS. The candidate's field of expertise should be specified in a brief nomination letter, along with a resume providing adequate description of the nominee's qualifications, including information that would enable the DOI to make an informed decision regarding membership and permit the DOI to contact a potential member. Nominations are to be sent to the email address listed under **ADDRESSES**. Final selection and appointment of Committee members will be made by the Secretary of the Interior.

Non-Federal members of the NVEWSAC serve without compensation. However, while away from their homes or regular places of business, members engaged in Committee business approved by the DFO may be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in Government service under 5 U.S.C. 5703.

Committee meetings are open to the public. Notice of committee meetings are published in the **Federal Register** at

least 15 days before the date of the meeting. The public will have an opportunity to provide input at these meetings.

*Authority:* 5 U.S.C. Appendix 2.

**Linda R. Huey,**

*Program Specialist, Natural Hazards Mission Area.*

[FR Doc. 2023–00325 Filed 1–10–23; 8:45 am]

**BILLING CODE 4338–11–P**

## DEPARTMENT OF THE INTERIOR

### Bureau of Indian Affairs

**[2341A2100DD/AAK001030/A0A501010.999900; OMB Control Number 1076–NEW]**

#### Agency Information Collection Activities; Submission to the Office of Management and Budget for Review and Approval; Indian Affairs Public Health Needs Assessment

**AGENCY:** Bureau of Indian Affairs, Interior.

**ACTION:** Notice of information collection; request for comment.

**SUMMARY:** In accordance with the Paperwork Reduction Act of 1995, we, the Assistant Secretary—Indian Affairs (AS–IA) are proposing a new information collection.

**DATES:** Interested persons are invited to submit comments on or before February 10, 2023.

**ADDRESSES:** Written comments and recommendations for the proposed information collection request (ICR) should be sent within 30 days of publication of this notice to the Office of Information and Regulatory Affairs (OIRA) through [https://www.reginfo.gov/public/do/PRA/ICRPublicCommentRequest?ref\\_nbr=202210-1076-002](https://www.reginfo.gov/public/do/PRA/ICRPublicCommentRequest?ref_nbr=202210-1076-002) or by visiting <https://www.reginfo.gov/public/do/PRAMain> and selecting “Currently under Review—Open for Public Comments” and then scrolling down to the “Department of the Interior.”

**FOR FURTHER INFORMATION CONTACT:** Steven Mullen, Information Collection Clearance Officer, [comments@bia.gov](mailto:comments@bia.gov), (202) 924–2650. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services.

**SUPPLEMENTARY INFORMATION:** In accordance with the Paperwork Reduction Act of 1995, we provide the general public and other Federal agencies with an opportunity to comment on new, proposed, revised,

and continuing collections of information. This helps us assess the impact of our information collection requirements and minimize the public's reporting burden. It also helps the public understand our information collection requirements and provide the requested data in the desired format.

A **Federal Register** notice with a 60-day public comment period soliciting comments on this collection of information was published on July 1, 2022 (87 FR 39546). No comments were received.

As part of our continuing effort to reduce paperwork and respondent burdens, we are again soliciting comments from the public and other Federal agencies on the proposed ICR that is described below. We are especially interested in public comment addressing the following:

(1) Whether or not the collection of information is necessary for the proper performance of the functions of the agency, including whether or not the information will have practical utility;

(2) The accuracy of our estimate of the burden for this collection of information, including the validity of the methodology and assumptions used;

(3) Ways to enhance the quality, utility, and clarity of the information to be collected; and

(4) How might the agency minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, *e.g.*, permitting electronic submission of response.

Comments that you submit in response to this notice are a matter of public record. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

**Abstract:** Enhancing the public health and safety capacity throughout Indian Affairs is a force multiplier in achieving the goals of our agency and in meeting the Occupational Safety and Health Act of 1970 (29 U.S.C. 654) directive to create a place of employment free from recognized hazards. The purpose of this survey is to identify and prioritize public health issues and needs and enhance the public health and safety

capacity throughout Indian country. The Office of Facilities, Property and Safety Management (OFPSM) Public Health and Safety (PHS) Team will use survey results to develop and coordinate action plans.

*Title of Collection:* Indian Affairs Public Health Needs Assessment.

*OMB Control Number:* 1076-NEW.

*Form Number:* None.

*Type of Review:* New.

*Respondents/Affected Public:* Tribal governments, bureau-operated and tribally-controlled schools and justice programs.

*Total Estimated Number of Annual Respondents:* 1,000.

*Total Estimated Number of Annual Responses:* 1,000.

*Estimated Completion Time per Response:* 10 minutes.

*Total Estimated Number of Annual Burden Hours:* 167.

*Respondent's Obligation:* Voluntary.

*Frequency of Collection:* On occasion.

*Total Estimated Annual Nonhour Burden:* \$0.

An agency may not conduct or sponsor and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number.

The authority for this action is the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*).

**Steven Mullen,**

*Information Collection Clearance Officer,  
Office of Regulatory Affairs and Collaborative  
Action—Indian Affairs.*

[FR Doc. 2023-00356 Filed 1-10-23; 8:45 am]

**BILLING CODE 4337-15-P**

## DEPARTMENT OF THE INTERIOR

### Bureau of Land Management

[LLOCB00000-L6300000.HD0000.23x.  
BLM\_OR\_FRN\_MO4500168474]

#### Notice of Cancellation and Rescheduling of Public Meetings of the Western Oregon Resource Advisory Council

**AGENCY:** Bureau of Land Management, Interior.

**ACTION:** Notice of public meetings.

**SUMMARY:** In accordance with the Federal Land Policy and Management Act and the Federal Advisory Committee Act of 1972, the U.S. Department of the Interior, Bureau of Land Management (BLM) Western Oregon Resource Advisory Council (RAC) has rescheduled public meetings that were originally scheduled for November 29 and December 1, 2022.

**DATES:** The Western Oregon RAC has rescheduled its meetings for:

- January 26, 2023, from 9 a.m. to 4 p.m. and January 27 from 9 a.m. to 3 p.m.; and

- February 14, 2023, from 9 a.m. to 4 p.m., and February 15 from 9 a.m. to 3 p.m.

**ADDRESSES:** The meetings will be virtual meetings held over the Zoom platform.

*Register for the January 25 and 26, 2023, meeting here: [https://blm.zoomgov.com/webinar/register/WN\\_FeLBgM4iSPmac6h87b1xxw](https://blm.zoomgov.com/webinar/register/WN_FeLBgM4iSPmac6h87b1xxw).*

*Register for the February 14 and 15, 2023, meeting here: [https://blm.zoomgov.com/webinar/register/WN\\_4xoJm3B8S0uWJvyBnCrQ4w](https://blm.zoomgov.com/webinar/register/WN_4xoJm3B8S0uWJvyBnCrQ4w).*

#### **FOR FURTHER INFORMATION CONTACT:**

Megan Harper, Public Affairs Specialist, Coos Bay District, 1300 Airport Lane, North Bend, OR 97504; phone: (541) 751-4353; email: [m1harper@blm.gov](mailto:m1harper@blm.gov). Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

**SUPPLEMENTARY INFORMATION:** The 15-member Western Oregon RAC advises the Secretary of the Interior, through the BLM, on a variety of public land issues across public lands in Western Oregon, including the Coos Bay, Medford, Northwest Oregon, and Roseburg Districts and part of the Lakeview District. Topics of discussion for these meetings include Secure Rural Schools Title II funding, recreation, recreation fee proposals, fire management, land use planning, invasive species management, timber management, travel management, wilderness, cultural resource management, and other issues as appropriate. The January 26 and 27, 2023, meetings will focus on reviewing projects that have been proposed to receive funding under Title II of the Secure Rural Schools and Community Self-Determination Act. The February 14 and 15, 2023 meetings will focus on Secure Rural Schools Title II funding, recreation fee legislation and future fee proposals, and timber management. Final agendas will be available on the RAC's web page 2 weeks in advance of the meeting at <https://www.blm.gov/get-involved/resource-advisory-council/near-you/oregon-washington/western-oregon-rac>.

The meetings are open to the public, and a public comment period will be held at 3 p.m. on January 26, and at 2 p.m. on January 27. On February 14, the public comment period will be held at

3 p.m., and at 2 p.m. on February 15. Depending on the number of persons wishing to comment, time allotted for individual oral comments may be limited. The public may present written comments to the RAC. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Please make requests in advance for sign language interpreter services, assistive listening devices, or other reasonable accommodations. We ask that you contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section of this notice at least 7 business days prior to the meeting to give the BLM sufficient time to process your request. All reasonable accommodation requests are managed on a case-by-case basis.

Summary minutes for the RAC meetings will be maintained in the Coos Bay District Office and will be available for public inspection and reproduction during regular business hours within 30 days following the meeting. Previous minutes, membership information, and upcoming agendas are available at: <https://www.blm.gov/get-involved/resource-advisory-council/near-you/oregon-washington>.

(Authority: 43 CFR 1784.4-2).

**Heather L. Whitman,**

*Designated Federal Official.*

[FR Doc. 2023-00386 Filed 1-10-23; 8:45 am]

**BILLING CODE 4331-24-P**

## DEPARTMENT OF THE INTERIOR

### Bureau of Land Management

[LLCA942000 L57000000.BX0000  
18XL5017AR; MO#4500167356]

#### Filing of Plats of Survey: California

**AGENCY:** Bureau of Land Management, Interior.

**ACTION:** Notice of official filing.

**SUMMARY:** The plats of survey of lands described in this notice are scheduled to be officially filed in the Bureau of Land Management (BLM), California State Office, Sacramento, California, 30 calendar days from the date of this publication. The surveys, which were executed at the request of the

Department of Defense, National Park Service, Bureau of Indian Affairs and Bureau of Land Management, are necessary for the management of these lands.

**DATES:** Unless there are protests to this action, the plats described in this notice will be filed on February 10, 2023.

**ADDRESSES:** You may submit written protests to the BLM California State Office, Cadastral Survey, 2800 Cottage Way, W-1623, Sacramento, CA 95825. A copy of the plats may be obtained from the BLM California State Office, Public Room, 2800 Cottage Way, W-1623, Sacramento, California 95825, upon required payment.

**FOR FURTHER INFORMATION CONTACT:** Joan Honda, Chief, Branch of Cadastral Survey, Bureau of Land Management, California State Office, 2800 Cottage Way, W-1623, Sacramento, California 95825; 1-916-978-4316; [jhonda@blm.gov](mailto:jhonda@blm.gov).

Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services for contacting Ms. Honda. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

**SUPPLEMENTARY INFORMATION:** The lands surveyed are:

**Mount Diablo Meridian, California**

- T. 3 N., R. 9 W., dependent resurvey and metes-and-bounds survey, for Group No. 1795, accepted September 9, 2022.
- T. 18 S., R. 11 E., dependent resurvey and subdivision of section 16, for Group No. 1791, accepted September 19, 2022.
- T. 43 N., R. 10 W., dependent resurvey, subdivision and metes-and-bounds survey, for Group No. 1783, accepted September 22, 2022.
- T. 44 N., R. 10 W., dependent resurvey, subdivision of sections and metes-and-bounds survey, for Group No. 1783, accepted September 22, 2022.

**San Bernardino Meridian, California**

- T. 12 N., R. 5 E., dependent resurvey and metes-and-bounds survey, for Group No. 1786, accepted September 19, 2022.
- T. 13 N., R. 5 E., dependent resurvey and metes-and-bounds survey, for Group No. 1786, accepted September 27, 2022.

A person or party who wishes to protest one or more plats of survey must file a written notice of protest within 30 calendar days from the date of this publication at the address listed in the **ADDRESSES** section of this notice. Any notice of protest received after the due date will be untimely and will not be considered. A written statement of

reasons in support of a protest, if not filed with the notice of protest, must be filed at the same address within 30 calendar days after the notice of protest is filed. If a protest against the survey is received prior to the date of official filing, the filing will be stayed pending consideration of the protest. A plat will not be officially filed until the day after all protests have been dismissed or otherwise resolved.

Before including your address, phone number, email address, or other personal identifying information in your notice of protest or statement of reasons, you should be aware that the documents you submit—including your personally identifiable information—may be made publicly available at any time.

*Authority:* 43 U.S.C., Chapter 3.

**Joan H. Honda,**

*Chief Cadastral Surveyor.*

[FR Doc. 2023-00335 Filed 1-10-23; 8:45 am]

**BILLING CODE 4310-40-P**

**DEPARTMENT OF THE INTERIOR**

**National Park Service**

**[NPS-WRST-LKCL-34740; PPAKAKROR4; PPMRLE1Y.LS0000; 233P103601]**

**National Park Service Alaska Region Subsistence Resource Commission Program; Notice of Public Meetings**

**AGENCY:** National Park Service, Interior.

**ACTION:** Meeting notice.

**SUMMARY:** The National Park Service (NPS) is hereby giving notice that the Lake Clark National Park SRC will meet as indicated below.

**DATES:** The Lake Clark National Park SRC will meet via teleconference from 11:30 a.m. to 12:30 p.m. or until business is completed on Wednesday, January 25, 2023. Teleconference participants must call 1-866-765-8024 participant code 4634519#.

**FOR FURTHER INFORMATION CONTACT:** For more detailed information regarding the Lake Clark SRC meeting or if you are interested in applying for membership, contact Designated Federal Officer Susanne Green, Superintendent, at (907) 644-3627 or via email at [susanne\\_green@nps.gov](mailto:susanne_green@nps.gov), or Liza Rupp, Subsistence Manager, at (907) 644-3648 or via email at [elizabeth\\_rupp@nps.gov](mailto:elizabeth_rupp@nps.gov), or Eva Patton, Federal Advisory Committee Group Federal Officer, at (907) 644-3601 or via email at [eva\\_patton@nps.gov](mailto:eva_patton@nps.gov).

Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access

telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

**SUPPLEMENTARY INFORMATION:** The NPS is holding meetings pursuant to the Federal Advisory Committee Act (5 U.S.C. appendix 2). The NPS SRC program is authorized under title VIII, section 808 of the Alaska National Interest Lands Conservation Act (16 U.S.C. 3118).

SRC meetings are open to the public and will have time allocated for public testimony. The public is welcome to present written or oral comments to the SRC. SRC meetings will be recorded and meeting minutes will be available upon request from the Superintendent for public inspection approximately six weeks after the meeting.

*Purpose of the Meeting:* The agenda may change to accommodate SRC business. The proposed meeting agenda for the meeting includes the following:

1. Call to Order—Confirm Quorum
2. Welcome and Introduction
3. Review and Adoption of Agenda
4. Superintendent's Welcome and Review of the SRC Purpose
5. Old Business—resume work not finished at the fall 2022 SRC meeting regarding information on the harvest of wildlife for sport purposes in National Preserves
6. Public and Other Agency Comments
7. Adjourn Meeting

*Meeting Accessibility:* Please make requests in advance for sign language interpreter services, assistive listening devices, or other reasonable accommodations. We ask that you contact the persons listed in the **(FOR FURTHER INFORMATION CONTACT)** section of this notice at least seven (7) business days prior to the meeting to give the Department of the Interior sufficient time to process your request. All reasonable accommodation requests are managed on a case-by-case basis.

*Public Disclosure of Comments:* Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.



*Authority:* 5 U.S.C. appendix 2.

**Alma Rippes,**

*Chief, Office of Policy.*

[FR Doc. 2023-00363 Filed 1-10-23; 8:45 am]

**BILLING CODE 4312-52-P**

**DEPARTMENT OF JUSTICE**

**National Institute of Corrections**

**Advisory Board; Notice of Meeting**

This notice announces a forthcoming meeting of the National Institute of Corrections (NIC) Advisory Board. At least one portion of the meeting will be closed to the public.

*Name of the Committee:* NIC Advisory Board.

*General Function of the Committee:*

To aid the National Institute of Corrections in developing long-range plans, advise on program development, and recommend guidance to assist NIC's efforts in the areas of training, technical assistance, information services, and policy/program development assistance to Federal, state, and local corrections agencies.

*Date and Time:* 8:00 a.m.–5:00 p.m. ET on Tuesday, January 24, 2023; 8:00 a.m.–11:00 a.m. ET on Wednesday, January 25, 2023; (approximate times).

*Location:* NIC Offices, 901 D Street SW, Room 901-3, Washington, DC 20024.

*Contact Person:* Leslie LeMaster, Executive Assistant, National Institute of Corrections, 320 First Street NW, Room 901-3, Washington, DC 20534. To contact Ms. LeMaster, please call (202) 305-5773 or [llemaster@bop.gov](mailto:llemaster@bop.gov).

*Agenda:* On January 24–25, 2023, the Advisory Board will: (1) receive a brief Agency Report from the NIC Acting Director, (2) receive project-specific updates from all NIC divisions, and (3) receive a Subcommittee Report related to the identification of potential NIC Director candidates. Time for questions and counsel from the Board is built into the agenda.

*Procedure:* On Tuesday, January 24, 2023 8:00 a.m.–12:00 p.m. the meeting is open to the public. Interested persons may request to attend in-person, and present data, information, or views, orally or in writing, on issues pending before the committee. Such requests must be made to the contact person on or before January 19, 2023. Oral presentations from the public will be scheduled between approximately 11:45 a.m.–12:00 p.m. on January 24, 2023. Time allotted for each presentation may be limited. Those who wish to make formal oral presentations should notify

the contact person and submit a brief statement of the general nature of the evidence or arguments they wish to present, the names and addresses of proposed participants, and an indication of the approximate time requested to make their presentation on or before January 19, 2023.

*Closed Committee Deliberations:* On January 24, 2023, between 1:15 p.m.–5:00 p.m., and on January 25, 2023 between 8:00 a.m.–11:00 a.m., the meeting will be closed to permit discussion of information that (1) relates solely to the internal personnel rules and practices of an agency (5 U.S.C. 552b(c)(2)), and (2) is of a personal nature where disclosure would constitute a clearly unwarranted invasion of personal privacy (5 U.S.C. 552b(c)(6)). The Advisory Board will discuss the outcomes of the subcommittee's review of potential candidates for the position of Director of the National Institute of Corrections and make determinations as to the Advisory Board's recommendations to the U.S. Attorney General.

*General Information:* NIC welcomes the attendance of the public at its advisory committee meetings and will make every effort to accommodate persons with physical disabilities or special needs. If you require special accommodations due to a disability, please contact Leslie LeMaster at least 7 days in advance of the meeting. Notice of this meeting is given under the Federal Advisory Committee Act (5 U.S.C. app. 2).

**Leslie S. LeMaster,**

*Executive Assistant and Designated Federal Official, National Institute of Corrections.*

[FR Doc. 2023-00395 Filed 1-10-23; 8:45 am]

**BILLING CODE P**

**NATIONAL ARCHIVES AND RECORDS ADMINISTRATION**

**[NARA-2023-013]**

**Records Management; General Records Schedule (GRS); GRS Transmittal 33**

**AGENCY:** National Archives and Records Administration (NARA).

**ACTION:** Notice of new General Records Schedule (GRS) Transmittal 33.

**SUMMARY:** NARA is issuing revisions to the General Records Schedule (GRS). The GRS provides mandatory disposition instructions for records common to several or all Federal agencies. Transmittal 33 includes only changes we have made to the GRS since we published Transmittal 32 in March

2022. Additional GRS schedules remain in effect that we are not issuing via this transmittal.

**DATES:** This transmittal is effective January 11, 2023.

**ADDRESSES:** You can find all GRS schedules, crosswalks, and FAQs at <http://www.archives.gov/records-mgmt/grs.html> (in Word, PDF, and CSV formats). You can download the complete current GRS, in PDF format, from the same location.

**FOR FURTHER INFORMATION CONTACT:** For more information about this notice or to obtain paper copies of the GRS, contact Kimberly Richardson, Strategy and Performance Division, by email at [regulation\\_comments@nara.gov](mailto:regulation_comments@nara.gov) or by telephone at 301-837-2902. Writing and maintaining the GRS is the GRS Team's responsibility. This team is part of Records Management Services in the National Records Management Program, Office of the Chief Records Officer, at NARA. You may contact NARA's GRS Team with general questions about the GRS at [GRS\\_Team@nara.gov](mailto:GRS_Team@nara.gov).

Your agency's records officer may contact the NARA appraiser or records analyst with whom your agency normally works for support in carrying out this transmittal and the revised portions of the GRS. You may access a list of the appraisal and scheduling work group and regional contacts on our website at <http://www.archives.gov/records-mgmt/appraisal/index.html>.

**SUPPLEMENTARY INFORMATION:** GRS Transmittal 33 announces changes to the General Records Schedules (GRS) made since NARA published GRS Transmittal 32 in March 2022. The GRS provide mandatory disposition instructions for records common to several or all Federal agencies per 44 U.S.C. 3303a(d).

Transmittal 33 includes alterations to three previously published schedules. This transmittal publishes only those schedules which have changed since they were last published in a transmittal. Other schedules not published in this transmittal remain current and authoritative. You can find all schedules (in Word and PDF formats), a master crosswalk, FAQs for all schedules, and FAQs about the whole GRS at <http://www.archives.gov/records-mgmt/grs.html>.

**1. What changes does this transmittal make to the GRS?**

GRS Transmittal 33 publishes updates to:

GRS 2.3—Employee Relations Records (see question 3 below)

GRS 3.2—Information Systems Security Records (see question 4 below)

GRS 6.1—Email and Other Electronic Messages Managed Under a Capstone Approach (see question 5 below)

## 2. What changes did we make to GRS 2.3, Employee Relations Records?

We updated items 010 and 020 to incorporate records related to religious accommodations. Previously, these items only covered records related to reasonable accommodations.

## 3. What changes did we make to GRS 3.2, Information Systems Security Records?

We added items 035 and 036 for cybersecurity logging records to support record retention requirements established in OMB Memo M–21–31, Improving the Federal Government's Investigative and Remediation Capabilities Related to Cybersecurity Incidents.

## 4. What changes did we make to GRS 6.1, Email and Other Electronic Messages Managed Under a Capstone Approach?

This update expands the scope of GRS 6.1 beyond email to certain electronic messages, as reflected in the title change: “Email and Other Electronic Messages Managed under a Capstone Approach.”

Agencies will now have the option of applying the GRS 6.1 Capstone approach to:

- electronic messages affiliated with email system chat or messaging functions, where the messages are managed independently from the email;
- messages from messaging services provided on mobile devices; and
- messages from messaging services on third-party applications.

Agencies still must submit NARA Form NA–1005, Verification for the Use of GRS 6.1, Email and Other Electronic Messages Managed Under a Capstone Approach, for approval to use GRS 6.1.

## 5. How do agencies cite GRS items?

When citing the legal disposition authority for records covered by the GRS on NARA documents, either when transferring records to Federal Records Centers for storage, to NARA for accessioning, or when requesting GRS deviations on record schedules, use the “DAA” number in the “Disposition Authority” column of the table. For example, “DAA–GRS–2017–0007–0008” rather than “GRS 2.2, item 070.” A GRS Disposition Authority Look-Up Table is available on our website at <https://www.archives.gov/records-mgmt/grs.html>.

## 6. Do agencies have to take any action to implement these GRS changes?

If your agency chooses to use the Capstone approach to managing email and other electronic messages (GRS 6.1), your agency must first submit the form NA–1005, *Verification for the Use of GRS 6.1*, for NARA review and approval. An agency may not implement GRS 6.1 until NARA approves the form. Your agency may already have an approved form NA–1005; agencies are, however, required to resubmit form NA–1005 every four years per NARA Bulletin 2022–02, *Resubmission of Capstone Forms*. Forms are to be submitted to [GRS\\_Team@nara.gov](mailto:GRS_Team@nara.gov).

NARA regulations (36 CFR 1226.12(a)) require agencies to disseminate GRS changes within six months of receipt.

Per 36 CFR 1227.12(a)(1), you must follow GRS dispositions that state they must be followed without exception.

Per 36 CFR 1227.12(a)(3), if you have an existing schedule that differs from a new GRS item that does not require being followed without exception, and you wish to continue using your agency-specific authority rather than the GRS authority, you must notify NARA within 120 days of the date of this transmittal. Please send these notifications to [GRS\\_Team@nara.gov](mailto:GRS_Team@nara.gov).

If you do not have an already existing agency-specific authority but wish to apply a retention period that differs from that specified in the GRS, you must submit a records schedule to NARA for approval via the Electronic Records Archives.

## 7. How can an agency get copies of the new GRS?

You can download the complete current GRS, in PDF format, from NARA's website at <http://www.archives.gov/records-mgmt/grs.html>.

## 8. Whom should an agency contact for further information?

Please contact [GRS\\_Team@nara.gov](mailto:GRS_Team@nara.gov) with any questions related to this transmittal.

**Debra Steidel Wall,**

*Acting Archivist of the United States.*

[FR Doc. 2023–00379 Filed 1–10–23; 8:45 am]

**BILLING CODE 7515–01–P**

## NATIONAL SCIENCE FOUNDATION

### Agency Information Collection Activities: Comment Request; Convergence Accelerator Evaluation & Monitoring Plan

**AGENCY:** National Science Foundation.  
**ACTION:** Submission for OMB review; comment request.

**SUMMARY:** The National Science Foundation (NSF) has submitted the following information collection requirement to OMB for review and clearance under the Paperwork Reduction Act of 1995. This is the second notice for public comment; the first was published in the **Federal Register**, and no comments were received. NSF is forwarding the proposed submission to the Office of Management and Budget (OMB) for clearance simultaneously with the publication of this second notice.

**DATES:** Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice.

**ADDRESSES:** Written comments and recommendations for the proposed information collection should be sent to [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain). Find this particular information collection by selecting “Currently under 30-day Review—Open for Public Comments” or by using the search function.

**FOR FURTHER INFORMATION CONTACT:** Suzanne H. Plimpton, Reports Clearance Officer, National Science Foundation, 2415 Eisenhower Avenue, Alexandria, Virginia 22314; telephone (703) 292–7556; or send email to [splimpto@nsf.gov](mailto:splimpto@nsf.gov). Individuals who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339, which is accessible 24 hours a day, 7 days a week, 365 days a year (including Federal holidays).

Copies of the submission may be obtained by calling 703–292–7556. NSF may not conduct or sponsor a collection of information unless the collection of information displays a currently valid OMB control number, and the agency informs potential persons who are to respond to the collection of information that such persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

### SUPPLEMENTARY INFORMATION:

*Title of Collection:* Convergence Accelerator Evaluation & Monitoring Plan.

*OMB Control No.:* 3145–New.

*Abstract:* The information collection will enable the Evaluation and Assessment Capability (EAC) Section within NSF to garner quantitative and qualitative information that will be used to inform programmatic improvements, efficiencies, and enhanced program monitoring for the Convergence Accelerator (CA). This information collection, which entails collecting information from CA applicants and grantees through a series of surveys, interviews, and case studies, is in accordance with the Agency's commitment to improving service delivery as well as the Agency's strategic goal to "advance the capability of the Nation to meet current and future challenges."

For this effort, four survey instruments have been developed, each of which will include closed-ended and open-ended questions to generate quantitative and qualitative data. For ease of use for our respondent pool, each of the four survey instruments will be programmed into interactive web surveys and distributed to eligible respondents by email. The surveys, which will serve as a census for all applicable CA applicants and/or grantees, will be used to collect baseline measures at the start of the program and vital information on how grantees progress through the program. Follow-up interviews will be conducted with project team leaders, such as Principal Investigators (PIs) and Principal Directors (PDs), and case studies that will use a project team as the unit of analysis will be used to collect qualitatively rich discursive and observational information that cannot be collected within a web survey. Both follow-up interviews and case studies will be conducted virtually with the possibility of in-person interviews and non-participant observation to be held in the future.

NSF/EAC will only submit a collection for approval under this generic clearance if it meets the following conditions:

- The collection is voluntary;
- The collection has a reasonably low burden for respondents (based on considerations of total burden hours, total number of respondents, or burden-hours per respondent) and is low-cost for the Federal government;
- The collection is non-controversial and does not raise issues of concern for other Federal agencies;
- The collection is targeted to the solicitation of opinions from respondents who have applied to the CA program (including those that have

submitted successful grant applications and subsequently received funding);

- Personally identifiable information (PII) is collected only to the extent necessary; and

- Information gathered will be used for the dual and interrelated purposes of disseminating information about the CA program and using this information to make programmatic improvements, efficiencies, and enhanced program monitoring for the CA.

Feedback collected under this generic clearance provides useful information for the continued evolution of the CA program, but it may not yield data that can be generalized to the overall population in all instances. Our qualitative data collection activities—follow-up interviews and case studies—are designed to investigate outlier CA teams or CA teams that demonstrate exceptional performance or successfully overcome significant challenges in their work with the CA. While the web surveys, which will be deployed at different times during the program, will collect data that will help the EAC monitor trends over time and assess overall program performance, the follow-up interviews and case studies will gather supplemental data that is more specific to individual CA teams.

As a general matter, this information collection will not include questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private.

Below we provide NSF's projected average estimates for the next three years:

*Affected Public:* Individuals and households, Businesses and other for-profit organizations, Not-for-profit institutions, Federal government.

*Average Expected Annual Number of Activities:* 10.

*Respondents:* 300 per activity.

*Annual Responses:* 3,000.

*Frequency of Response:* Once per request.

*Average Minutes per Response:* 75.

*Burden Hours:* 1,400.

*Comments:* Comments are invited on (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Agency, including whether the information shall have practical utility; (b) the accuracy of the Agency's estimate of the burden of the proposed collection of information; (c) ways to enhance the quality, utility, and clarity of the information on respondents, including through the use of automated collection techniques or other forms of information technology; and (d) ways to minimize the burden of the collection of

information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology should be addressed to the points of contact in the **FOR FURTHER INFORMATION CONTACT** section.

Dated: January 6, 2023.

**Suzanne H. Plimpton,**

*Reports Clearance Officer, National Science Foundation.*

[FR Doc. 2023–00412 Filed 1–10–23; 8:45 am]

**BILLING CODE 7555–01–P**

## NATIONAL SCIENCE FOUNDATION

### Astronomy and Astrophysics Advisory Committee; Notice of Meeting

In accordance with the Federal Advisory Committee Act (Pub. L. 92–463, as amended), the National Science Foundation (NSF) announces the following meeting:

*Name and Committee Code:* Astronomy and Astrophysics Advisory Committee (#13883) (Virtual).

*Date and Time:* January 26, 2023; 9:30 a.m.–4:00 p.m.; January 27, 2023, 9:30 a.m.–4:00 p.m.

*Place:* National Science Foundation, 2415 Eisenhower Avenue, Alexandria, VA 22314 (Zoom Videoconference).

Attendance information for the meeting will be forthcoming on the AAAC website: <https://www.nsf.gov/mps/ast/aaac.jsp>.

*Type of Meeting:* Open.

*Contact Person:* Dr. Carrie Black, Program Director, Division of Astronomical Sciences, Suite W 9188, National Science Foundation, 2415 Eisenhower Avenue, Alexandria, VA 22314; Telephone: 703–292–2426.

*Purpose of Meeting:* To provide advice and recommendations to the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA) and the U.S. Department of Energy (DOE) on issues within the field of astronomy and astrophysics that are of mutual interest and concern to the agencies. To prepare the annual report.

*Agenda:* To hear presentations of current programming by representatives from NSF, NASA, DOE and other agencies relevant to astronomy and astrophysics; to discuss current and potential areas of cooperation between the agencies; to formulate recommendations for continued and new areas of cooperation and mechanisms for achieving them.

Dated: January 6, 2023.

**Crystal Robinson,**

*Committee Management Officer.*

[FR Doc. 2023-00343 Filed 1-10-23; 8:45 am]

BILLING CODE 7555-01-P

## NUCLEAR REGULATORY COMMISSION

[Docket No. 70-1374; NRC-2022-0032]

### Idaho State University

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** License renewal; issuance.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) has renewed Special Nuclear Materials (SNM) License No. SNM-1373, to Idaho State University (ISU, the licensee) located in Pocatello, Idaho. The renewed license authorizes ISU to continue to possess and use SNM for a period of 10 years and will expire on January 5, 2033.

**DATES:** License No. SNM-1373 was issued on January 6, 2023, and is effective as of the date of issuance.

**ADDRESSES:** Please refer to Docket ID NRC-2022-0032 when contacting the NRC about the availability of information regarding this document. You may obtain publicly available information related to this document using any of the following methods:

- *Federal Rulemaking website:* Go to <https://www.regulations.gov> and search for Docket ID NRC-2022-0032. Address questions about Docket IDs in *Regulations.gov* to Stacy Schumann; telephone: 301-415-0624; email: [Stacy.Schumann@nrc.gov](mailto:Stacy.Schumann@nrc.gov). For technical questions, contact the individual listed in the For **FURTHER INFORMATION CONTACT** section of this document.

- *NRC's Agencywide Documents Access and Management System (ADAMS):* You may obtain publicly available documents online in the ADAMS Public Documents collection at <https://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "Begin Web-based ADAMS Search." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by email to [PDR.Resource@nrc.gov](mailto:PDR.Resource@nrc.gov). The ADAMS accession number for each document referenced (if it is available in ADAMS) is provided in the "Availability of Documents" section.

- *NRC's PDR:* You may examine and purchase copies of public documents,

by appointment, at the NRC's PDR, Room P1 B35, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852. To make an appointment to visit the PDR, please send an email to [PDR.Resource@nrc.gov](mailto:PDR.Resource@nrc.gov) or call 1-800-397-4209 or 301-415-4737, between 8:00 a.m. and 4:00 p.m. Eastern Time (ET), Monday through Friday, except Federal holidays.

#### FOR FURTHER INFORMATION CONTACT:

Osiris Siurano-Pérez, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone: 301-415-7827, email: [Osiris.Siurano-Perez@nrc.gov](mailto:Osiris.Siurano-Perez@nrc.gov).

#### SUPPLEMENTARY INFORMATION:

##### I. Background

ISU is a public research university in Pocatello, Idaho. ISU possesses and uses SNM, under this license primarily for instructional purposes in senior and graduate-level laboratory courses. The quantity of SNM possessed and used by ISU requires an NRC-issued SNM license pursuant to part 70 of title 10 of the *Code of Federal Regulations* (10 CFR), "Domestic licensing of special nuclear material."

##### II. Discussion

Pursuant to section 2.106 of 10 CFR, the NRC is providing notice of the issuance of renewal of a 10 CFR part 70 license, SNM-1373, to ISU in Pocatello, Idaho. The license authorizes ISU to possess and use SNM for education, research, and training programs in senior and graduate-level laboratory courses at its Pocatello campus. ISU's original license renewal application for a 10-year license was made by letter dated July 9, 2021. The term of ISU's license expired on August 11, 2021. The NRC staff performed an acceptance review of ISU's application and determined that it did not contain sufficient technical information to proceed with its detailed technical review. The NRC staff discussed its findings during a call with ISU on September 8, 2021. Following the call, by letter dated September 9, 2021, the NRC staff documented its findings and decision to decline to proceed with a detailed technical review and provided ISU the opportunity to supplement the application by addressing the issues discussed in the enclosure to the request for supplemental information (RSI) letter. ISU was also notified that, since it filed its license renewal application at least 30 days before the license's expiration date, pursuant to the timely

renewal provisions in 10 CFR 70.38(a), ISU was permitted to continue using its SNM in accordance with the existing SNM-1373 license, pending a final decision by the Commission on the license renewal application. ISU revised and resubmitted its application to the NRC by letter dated December 6, 2021. By letter dated January 20, 2022, the NRC informed ISU of its decision to accept the application and proceed with its detailed technical review.

On February 23, 2022, a notice of receipt of ISU's license renewal application with an opportunity for the public to request a hearing and petition for leave to intervene was published in the **Federal Register** (87 FR 10259). The NRC did not receive a request for a hearing or for a petition for leave to intervene.

The license renewal application was subsequently supplemented by letters dated March 3, 2022, and March 24, 2022. The March 24, 2022, version of the license renewal application is a standalone document that integrates the information provided in ISU's responses to the NRC staff's requests for additional information.

The NRC staff determined that ISU's proposed licensed activities meet the categorical exclusion in 10 CFR 51.22(c)(14)(v) for the use of radioactive materials for research and development and for educational purposes. Therefore, an environmental assessment and an environmental impact statement are not required for the renewal of the SNM-1373 license.

The NRC finds that the renewed license complies with the standards and requirements of the Atomic Energy Act of 1954, as amended, and the NRC's rules and regulations as set forth in 10 CFR chapter 1. Accordingly, the renewed license issued on January 6, 2023, is effective as of the date of issuance. The NRC prepared a safety evaluation report (SER) for the renewal of License SNM-1373 and concluded that the licensee can continue to use and possess SNM in accordance with its license without endangering the health and safety of the public, and that this action will not significantly affect the quality of the human environment for the duration of the license.

##### III. Availability of Documents

Documents related to this action, including the license renewal application and other supporting documentation, are available to interested persons as indicated.

Document description	ADAMS accession No.
License Renewal Application (Initial), dated July 9, 2021 .....	ML21190A251 (package).
Request for Supplemental Information, dated September 9, 2021 .....	ML21246A164 (package).
ISU Response to Request for Supplemental Information, Dated December 6, 2021 .....	ML21351A166 (package).
Request for Additional Information, dated February 7, 2022 .....	ML22033A444.
Acceptance of ISU's License Renewal Application, dated January 20, 2022 .....	ML22018A285.
ISU Response Request for Additional Information, dated March 4, 2022 .....	ML22075A215.
NRC Request for Clarification of Responses to the Request for Additional Information, dated March 21, 2022 .....	ML22081A296.
ISU Response to Request for Clarification of Responses to the Request for Additional Information, dated March 24, 2022.	ML22091A298.
ISU's Revised License Application, dated March 25, 2022 .....	ML22306A112.
Letter—SNM-1373 License Renewal Transmittal, dated January 6, 2023 .....	ML22147A069.
SER on ISU License Renewal Application, dated January 6, 2023 .....	ML22147A070.
October 2022 Renewed SNM-1373, dated January 6, 2023 .....	ML22147A071.
SER on ISU License Renewal Application .....	ML22147A072.
(non-public, withheld pursuant to 10 CFR 2.390) .....	
October 2022 Renewed SNM-1373 Sensitive Conditions (non-public, withheld pursuant to 10 CFR 2.390) .....	ML22147A073.

Dated: January 6, 2023.

For the Nuclear Regulatory Commission.

**Carrie M. Safford,**

*Deputy Director Division of Fuel Management, Office of Nuclear Material Safety and Safeguards.*

[FR Doc. 2023-00406 Filed 1-10-23; 8:45 am]

BILLING CODE 7590-01-P

## SECURITIES AND EXCHANGE COMMISSION

[Release Nos. 33-11143; 34-96605; IA-6212; IC-34797]

### Adjustments to Civil Monetary Penalty Amounts

**AGENCY:** Securities and Exchange Commission.

**ACTION:** Notice of annual inflation adjustment of civil monetary penalties.

**SUMMARY:** The Securities and Exchange Commission (the "Commission") is publishing this notice (the "Notice") pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (the "2015 Act"). This Act requires all agencies to annually adjust for inflation the civil monetary penalties that can be imposed under the statutes administered by the agency and publish the adjusted amounts in the **Federal Register**. This Notice sets forth the annual inflation adjustment of the maximum amount of civil monetary penalties ("CMPs") administered by the Commission under the Securities Act of 1933, the Securities Exchange Act of 1934 (the "Exchange Act"), the Investment Company Act of 1940, the Investment Advisers Act of 1940, and certain penalties under the Sarbanes-Oxley Act of 2002. These amounts are effective beginning on January 15, 2023, and will apply to all penalties imposed after that date for violations of the aforementioned statutes that occurred after November 2, 2015.

### FOR FURTHER INFORMATION CONTACT:

Stephen M. Ng, Senior Special Counsel, Office of the General Counsel, at (202) 551-7957, or Hannah W. Riedel, Senior Counsel, Office of the General Counsel, at (202) 551-7918.

### SUPPLEMENTARY INFORMATION:

#### I. Background

This Notice is being published pursuant to the 2015 Act,<sup>1</sup> which amended the Federal Civil Penalties Inflation Adjustment Act of 1990 (the "Inflation Adjustment Act").<sup>2</sup> The Inflation Adjustment Act previously had been amended by the Debt Collection Improvement Act of 1996 (the "DCIA")<sup>3</sup> to require that each federal agency adopt regulations at least once every four years that adjust for inflation the CMPs that can be imposed under the statutes administered by the agency. Pursuant to this requirement, the Commission previously adopted regulations in 1996, 2001, 2005, 2009, and 2013 to adjust the maximum amount of the CMPs that could be imposed under the statutes the Commission administers.<sup>4</sup>

<sup>1</sup> Public Law 114-74 Sec. 701, 129 Stat. 599-601 (Nov. 2, 2015), codified at 28 U.S.C. 2461 note.

<sup>2</sup> Public Law 101-410, 104 Stat. 890-892 (1990), codified at 28 U.S.C. 2461 note.

<sup>3</sup> Public Law 104-134, Title III, section 31001(s)(1), 110 Stat. 1321-373 (1996), codified at 28 U.S.C. 2461 note.

<sup>4</sup> See Release Nos. 33-7361, 34-37912, IA-1596, IC-22310, dated November 1, 1996 (61 FR 57773 (Nov. 8, 1996)) (effective December 9, 1996), previously found at 17 CFR 201.1001 and table I to subpart E of part 201; Release Nos. 33-7946, 34-43897, IA-1921, IC-24846, dated January 31, 2001 (66 FR 8761 (Feb. 2, 2001)) (effective February 2, 2001), previously found at 17 CFR 201.1002 and table II to subpart E of part 201; Release Nos. 33-8530, 34-51136, IA-2348, IC-26748, dated February 9, 2005 (70 FR 7606 (Feb. 14, 2005)) (effective February 14, 2005), previously found at 17 CFR 201.1003 and table III to subpart E of part 201; Release Nos. 33-9009, 34-59449, IA-2845, IC-28635, dated February 25, 2009 (74 FR 9159 (Mar. 3, 2009)) (effective March 3, 2009), previously found at 17 CFR 201.1004 and table IV to subpart E of part 201; and Release Nos. 33-9387, 34-68994,

The 2015 Act replaces the inflation adjustment formula prescribed in the DCIA with a new formula for calculating the inflation-adjusted amount of CMPs. The 2015 Act requires that agencies use this new formula to re-calculate the inflation-adjusted amounts of the penalties they administer on an annual basis and publish these new amounts in the **Federal Register** by January 15 of each year.<sup>5</sup> The Commission previously published the first annual adjustment required by the 2015 Act on January 6, 2017 (the "2017 Adjustment").<sup>6</sup> As part of the 2017 Adjustment, the Commission promulgated 17 CFR 201.1001(a) and table I to 17 CFR 201.1001, which lists the penalty amounts for all violations that occurred on or before November 2, 2015. For violations occurring after November 2, 2015, § 201.1001(b) provides that the applicable penalty amounts will be adjusted annually based on the formula set forth in the 2015 Act. Section 201.1001(b) further provides that these adjusted amounts will be published in the **Federal Register** and on the Commission's website. The Commission published the two most recent annual adjustments on January 8, 2021 ("2021 Adjustment")<sup>7</sup> and January 6, 2022 ("2022 Adjustment").<sup>8</sup>

A CMP is defined in relevant part as any penalty, fine, or other sanction that:

IA-3557, IC-30408, dated February 27, 2013 (78 FR 14179 (Mar. 5, 2013)) (effective March 5, 2013), previously found at 17 CFR 201.1005 and table V to subpart E of part 201. The penalty amounts contained in these releases have now been consolidated into table I to 17 CFR 201.1001.

<sup>5</sup> 28 U.S.C. 2461 note sec. 4.

<sup>6</sup> Release Nos. 33-10276; 34-79749; IA-4599; IC-32414 (82 FR 5367 (Jan. 18, 2017)) (effective Jan. 18, 2017).

<sup>7</sup> Release Nos. 33-10918; 34-90874; IA-5664; IC-34166 (86 FR 2716 (Jan. 13, 2021)) (effective Jan. 15, 2021).

<sup>8</sup> Release Nos. 33-11021; 34-93925; IA-5938; IC-34466 (87 FR 1808 (Jan. 12, 2022)) (effective Jan. 15, 2022).

(1) is for a specific amount, or has a maximum amount, as provided by Federal law; and (2) is assessed or enforced by an agency in an administrative proceeding or by a Federal court pursuant to Federal law.<sup>9</sup> This definition applies to the monetary penalty provisions contained in four statutes administered by the Commission: the Securities Act, the Exchange Act, the Investment Company Act, and the Investment Advisers Act. In addition, the Sarbanes-Oxley Act provides the Public Company Accounting Oversight Board (the “PCAOB”) authority to levy civil monetary penalties in its disciplinary proceedings pursuant to 15 U.S.C. 7215(c)(4)(D).<sup>10</sup> The definition of a CMP in the Inflation Adjustment Act

encompasses such civil monetary penalties.<sup>11</sup>

**II. Adjusting the Commission’s Penalty Amounts for Inflation**

This Notice sets forth the annual inflation adjustment required by the 2015 Act for all CMPs under the Securities Act, the Exchange Act, the Investment Company Act, and the Investment Advisers Act, and certain civil monetary penalties under the Sarbanes-Oxley Act.

Pursuant to the 2015 Act, the penalty amounts in the 2023 Adjustment are adjusted for inflation by increasing them by the percentage change between the Consumer Price Index for all Urban Consumers (“CPI-U”) for October 2021 and the October 2022 CPI-U.<sup>12</sup> The Office of Management and Budget (“OMB”) has provided its calculation of

this multiplier (the “CPI-U Multiplier”) to agencies.<sup>13</sup> The new penalty amounts are determined by multiplying the amounts in the 2022 Adjustment by the CPI-U Multiplier and then rounding to the nearest dollar.

For example, the CMP for certain insider trading violations by controlling persons under Exchange Act Section 21A(a)(3)<sup>14</sup> was readjusted for inflation as part of the 2022 Adjustment to \$2,301,065. To determine the new CMP under this provision, the Commission multiplies this amount by the CPI-U Multiplier of 1.07745, and rounds to the nearest dollar. Thus, the new CMP for Exchange Act section 21A(a)(3) is \$2,479,282.

Below is the Commission’s calculation of the new penalty amounts for the penalties it administers:

U.S. Code citation	Civil monetary penalty description	2022 Adjustment penalty amounts	CPI-U multiplier	2023 Adjusted penalty amounts
15 U.S.C. 77h–1(g) (Securities Act sec. 8A(g)).	For natural person .....	\$9,484	1.07745	\$10,219
	For any other person .....	94,847	1.07745	102,193
	For natural person/fraud .....	94,847	1.07745	102,193
	For any other person/fraud .....	474,233	1.07745	510,962
	For natural person/fraud/substantial losses or risk of losses to others or gains to self.	189,693	1.07745	204,385
15 U.S.C. 77t(d) (Securities Act sec. 20(d)).	For any other person/fraud/substantial losses or risk of losses to others or gain to self.	916,850	1.07745	987,860
	For natural person .....	10,360	1.07745	11,162
	For any other person .....	103,591	1.07745	111,614
	For natural person/fraud .....	103,591	1.07745	111,614
	For any other person/fraud .....	517,955	1.07745	558,071
15 U.S.C. 78u(d)(3) (Exchange Act sec. 21(d)(3)).	For natural person/fraud/substantial losses or risk of losses to others.	207,183	1.07745	223,229
	For any other person/fraud/substantial losses or risk of losses to others.	1,035,909	1.07745	1,116,140
	For natural person .....	10,360	1.07745	11,162
	For any other person .....	103,591	1.07745	111,614
	For natural person/fraud .....	103,591	1.07745	111,614
15 U.S.C. 78u–1(a)(3) (Exchange Act sec. 21A(a)(3)).	For any other person/fraud .....	517,955	1.07745	558,071
	For natural person/fraud/substantial losses or risk of losses to others or gains to self.	207,183	1.07745	223,229
	For any other person/fraud/substantial losses or risk of losses to others or gain to self.	1,035,909	1.07745	1,116,140
	Insider Trading—controlling person .....	2,301,065	1.07745	2,479,282
	For natural person .....	10,360	1.07745	11,162
15 U.S.C. 78u–2 (Exchange Act sec. 21B).	For any other person .....	103,591	1.07745	111,614
	For natural person/fraud .....	103,591	1.07745	111,614
	For any other person/fraud .....	517,955	1.07745	558,071
	For natural person/fraud/substantial losses or risk of losses to others.	207,183	1.07745	223,229
	For any other person/fraud/substantial losses or risk of losses to others.	1,035,909	1.07745	1,116,140
15 U.S.C. 78ff(b) (Exchange Act sec. 32(b)).	Exchange Act/failure to file information documents, reports	612	1.07745	659

<sup>9</sup> 28 U.S.C. 2461 note sec. 3(2).

<sup>10</sup> 15 U.S.C. 7215(c)(4)(D).

<sup>11</sup> The Commission may by order affirm, modify, remand, or set aside sanctions, including civil monetary penalties, imposed by the PCAOB. See section 107(c) of the Sarbanes-Oxley Act of 2002, 15 U.S.C. 7217. The Commission may enforce such orders in federal district court pursuant to section 21(e) of the Exchange Act. As a result, penalties

assessed by the PCAOB in its disciplinary proceedings are penalties “enforced” by the Commission for purposes of the Inflation Adjustment Act. See *Adjustments to Civil Monetary Penalty Amounts*, Release No. 33–8530 (Feb. 4, 2005) [70 FR 7606 (Feb. 14, 2005)].

<sup>12</sup> 28 U.S.C. 2461 note Sec. 5.

<sup>13</sup> Office of Management and Budget, *Implementation of Penalty Inflation Adjustments*

for 2023, Pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (December 15, 2022), available at <https://www.whitehouse.gov/wp-content/uploads/2022/12/M-23-05-CMP-CMP-Guidance.pdf>. This multiplier represents the percentage increase between the October 2021 CPI-U and the October 2022 CPI-U, plus 1.

<sup>14</sup> 15 U.S.C. 78u–1(a)(3).

U.S. Code citation	Civil monetary penalty description	2022 Adjustment penalty amounts	CPI-U multiplier	2023 Adjusted penalty amounts
15 U.S.C. 78ff(c)(1)(B) (Exchange Act sec. 32(c)(1)(B)).	Foreign Corrupt Practices—any issuer .....	23,011	1.07745	24,793
15 U.S.C. 78ff(c)(2)(B) (Exchange Act sec. 32(c)(2)(B)).	Foreign Corrupt Practices—any agent or stockholder acting on behalf of issuer.	23,011	1.07745	24,793
15 U.S.C. 80a–9(d) (Investment Company Act sec. 9(d)).	For natural person .....	10,360	1.07745	11,162
	For any other person .....	103,591	1.07745	111,614
	For natural person/fraud .....	103,591	1.07745	111,614
	For any other person/fraud .....	517,955	1.07745	558,071
	For natural person/fraud/substantial losses or risk of losses to others or gains to self.	207,183	1.07745	223,229
15 U.S.C. 80a–41(e) (Investment Company Act sec. 42(e)).	For natural person .....	10,360	1.07745	11,162
	For any other person .....	103,591	1.07745	111,614
	For natural person/fraud .....	103,591	1.07745	111,614
	For any other person/fraud .....	517,955	1.07745	558,071
	For natural person/fraud/substantial losses or risk of losses to others.	207,183	1.07745	223,229
15 U.S.C. 80b–3(i) (Investment Advisers Act sec. 203(i)).	For natural person .....	10,360	1.07745	11,162
	For any other person .....	103,591	1.07745	111,614
	For natural person/fraud .....	103,591	1.07745	111,614
	For any other person/fraud .....	517,955	1.07745	558,071
	For natural person/fraud/substantial losses or risk of losses to others or gains to self.	207,183	1.07745	223,229
15 U.S.C. 80b–9(e) (Investment Advisers Act sec. 209(e)).	For natural person .....	10,360	1.07745	11,162
	For any other person .....	103,591	1.07745	111,614
	For natural person/fraud .....	103,591	1.07745	111,614
	For any other person/fraud .....	517,955	1.07745	558,071
	For natural person/fraud/substantial losses or risk of losses to others.	207,183	1.07745	223,229
15 U.S.C. 7215(c)(4)(D)(i) (Sarbanes-Oxley Act sec. 105(c)(4)(D)(i)).	For natural person .....	152,557	1.07745	164,373
	For any other person .....	3,051,164	1.07745	3,287,477
15 U.S.C. 7215(c)(4)(D)(ii) (Sarbanes-Oxley Act sec. 105(c)(4)(D)(ii)).	For natural person .....	1,144,186	1.07745	1,232,803
	For any other person .....	22,883,723	1.07745	24,656,067

Pursuant to the 2015 Act and 17 CFR 201.1001, the adjusted penalty amounts in this Notice (and all penalty adjustments performed pursuant to the 2015 Act) apply to penalties imposed after the date the adjustment is effective for violations that occurred after November 2, 2015, the 2015 Act’s enactment date. These penalty amounts supersede the amounts in the 2022 Adjustment.<sup>15</sup> For violations that occurred on or before November 2,

<sup>15</sup> The penalty amounts in this Notice are being published in the *Federal Register* and will not be added to the Code of Federal Regulations in accordance with the 2015 Act and 17 CFR 201.1001(b). See 28 U.S.C. 2461 note sec. 4(a)(2); 17 CFR 201.1001(b). In addition to being published in the *Federal Register*, the penalty amounts in this Notice will be made available on the Commission’s website at <https://www.sec.gov/enforce/civil-penalties-inflation-adjustments.htm>, as detailed in 17 CFR 201.1001(b). This website also lists the penalty amounts for violations that occurred on or before November 2, 2015.

2015, the penalty amounts in table I to 17 CFR 201.1001 continue to apply.<sup>16</sup>

**III. Small Business Regulatory Enforcement Fairness Act Status**

OMB has concurred in our recommendation that this Notice is not a “major rule” as defined by section 251 of the Small Business Regulatory Enforcement Fairness Act (“SBREFA”), 5 U.S.C. 804(2), because (1) it will not have an annual effect of \$100 million dollars or more on the economy, (2) it does not present a major increase in prices for consumers or individual industries, and (3) it does not have significant adverse effects on competition, investment, or innovation.<sup>17</sup>

By the Commission.

<sup>16</sup> 17 CFR 201.1001(a).

<sup>17</sup> See generally SBREFA, Public Law 104–121 (1996).

Dated: January 6, 2023.

**Vanessa A. Countryman,**  
*Secretary.*

[FR Doc. 2023–00370 Filed 1–10–23; 8:45 am]

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**SECURITIES AND EXCHANGE COMMISSION**

[Release No. 34–96601; File No. SR–NASDAQ–2022–077]

**Self-Regulatory Organizations; The Nasdaq Stock Market LLC; Notice of Filing of Proposed Rule Change To Amend Rule 4702 To Establish New “Contra Midpoint Only” and “Contra Midpoint Only With Post-Only” Order Types**

January 5, 2023

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934

(“Act”),<sup>1</sup> and Rule 19b-4 thereunder,<sup>2</sup> notice is hereby given that on December 22, 2022, The Nasdaq Stock Market LLC (“Nasdaq” or “Exchange”) filed with the Securities and Exchange Commission (“SEC” or “Commission”) the proposed rule change as described in Items I and II below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

### **I. Self-Regulatory Organization’s Statement of the Terms of Substance of the Proposed Rule Change**

The Exchange proposes to amend Rule 4702 to establish new “Contra Midpoint Only” and “Contra Midpoint Only with Post-Only” Order Types.

The text of the proposed rule change is available on the Exchange’s website at <https://listingcenter.nasdaq.com/rulebook/nasdaq/rules>, at the principal office of the Exchange, and at the Commission’s Public Reference Room.

### **II. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change**

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

#### *A. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change*

##### **1. Purpose**

The Exchange proposes to amend Rule 4702(b) to establish “Contra Midpoint Only” or “CMO” and “Contra Midpoint Only with Post-Only” or “CMO+PO” as new Order Types on the Exchange.

A CMO is a non-displayed Order Type priced at the midpoint between the National Best Bid and the National Best Offer (the “NBBO” and the midpoint of the NBBO, the “Midpoint”). The Exchange will cancel a CMO resting on the Order Book upon entry of certain types of incoming Orders that are indicative of pending price movements that would be less favorable to the CMO user than the prevailing price, thus

providing protection to the CMO user against executions at the prevailing Midpoint price that the user may deem unfavorable. As explained below, once the System cancels a CMO under these circumstances, the user would be free to submit a new CMO at the new Midpoint price or, in certain cases, the Exchange would do so automatically on behalf of the user.

A CMO+PO is similar to a CMO, except that it provides for “post-only” functionality, meaning that like a Midpoint Peg Post-Only Order,<sup>3</sup> a CMO+PO will execute upon entry only in circumstances where economically beneficial to the party entering the Order.

The CMO and CMO+PO are the latest in a series of innovative Order Types that the Exchange has developed to provide market participants with options that allow them to make their own determinations with regards to various trade-offs that exist when executing their strategies in the markets. One such trade off might be the amount of liquidity they can obtain in the near term versus the potential for market movement relative to the Midpoint price. Some participants may value avoiding immediate executions in order to wait for a better price while others would rather obtain the liquidity instead of waiting. Further, these options allow similarly-minded market participants to interact via these Order Types. In 2018, for example, Nasdaq introduced the Midpoint Extended Life Order (“M-ELO”).<sup>4</sup> Like CMO, M-ELO is also a non-displayed Order Type that executes only at the Midpoint. It is eligible to execute only against other M-ELOs, and it protects users from interacting with time-sensitive orders by requiring them to wait a period of time (a “Holding Period”) before their M-ELO is eligible to execute (originally one-half second, and subsequently reduced to 10 milliseconds).<sup>5</sup> In 2019, the Exchange enhanced the M-ELO concept by adding the Midpoint Extended Life Order Plus Continuous Book (“M-ELO+CB”).<sup>6</sup> A M-ELO+CB behaves exactly like a M-ELO, except

that it may also interact with Midpoint Orders on the Exchange’s Continuous Book (and thus have access to larger sources of liquidity) to the extent that such Midpoint Orders, in turn, opt to rest on the Continuous Book for at least 10 milliseconds before becoming eligible to execute against a M-ELO+CB. CMO and CMO+PO are the latest variations on the M-ELO/M-ELO+CB theme. M-ELOs only trade against other Orders from like-minded participants that are willing to wait the required time period before trading. CMOs and CMO+POs, by contrast, can trade in a wider array of situations, but like M-ELO, they will not trade in instances where the incoming order is likely to impact the prevailing price of the security.<sup>7</sup> This will provide users of CMOs and CMO+POs with opportunities for more liquidity interaction than M-ELO but with slightly less protection. On the other hand, CMOs and CMO+POs will provide more protection to users than regular Midpoint Orders, but with less opportunity to interact with liquidity. Instead of imposing a waiting period, the Exchange will cancel a resting CMO when it faces incoming orders that are likely to shift the Midpoint, while also providing an opportunity to a participant to receive price improvement if or when the participant resubmits its CMO or CMO+PO to take advantage of a shift in the Midpoint.

The specific proposed characteristics of the CMO are as follows.

A CMO is a non-displayed Order Type with the Midpoint Pegging Attribute that will be priced and ranked in time order at the Midpoint. A user may cancel a CMO at any time.

The System will cancel a CMO Order automatically if a CMO is resting at the Midpoint on the Exchange Book, an incoming Order is priced through the price of the CMO, the CMO would otherwise trade against the incoming Order,<sup>8</sup> and one or more of the following conditions apply, which the Exchange observes are indicative of a pending price shift in favor of the CMO user:

- The incoming Order is Displayed and its size is greater than that of the resting CMO;

<sup>7</sup> As part of its proposal, the Exchange proposes to amend Rule 4702(b)(15) to state that a M-ELO+CB that satisfies the Holding Period of that Order Type shall be eligible to execute (at the midpoint of the NBBO) against other eligible Contra Midpoint Only Orders and Contra Midpoint Only with Post-Only Orders.

<sup>8</sup> For example, if the incoming Order is filled fully by resting interest with price/time priority ahead of the resting CMO Order, then the CMO order will not be cancelled by the System.

<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b-4.

<sup>3</sup> See Rule 4702(b)(5).

<sup>4</sup> See Securities Exchange Act Release No. 34-82825 (Mar. 7, 2018), 83 FR 10937 (Mar. 13, 2018) (order approving SR-NASDAQ-2017-074).

<sup>5</sup> In 2020, the Commission issued an order approving the Exchange’s proposal to shorten the Holding Period for M-ELO and M-ELO+CB Orders from one-half second to 10 milliseconds. See Securities Exchange Act Release No. 34-88743 (April 24, 2020), 85 FR 24068 (April 30, 2020) (order approving SR-NASDAQ-2020-011).

<sup>6</sup> See Securities Exchange Act Release No. 34-86938 (September 11, 2019), 84 FR 48978 (September 17, 2019) (order approving SR-NASDAQ-2019-048).



- The incoming Order is not Displayed, it is priced at the far side of the NBBO, and its size is greater than that of the resting CMO; or
- The incoming Order is assigned the ISO attribute.

Again, in these instances, the Exchange observes that the incoming Order will likely cause the NBBO to shift, such that cancellation of the CMO will be preferable to allowing the CMO to execute at a Midpoint price that may be stale. The user may then choose to resubmit the CMO manually to take advantage of the price shift, in the case of a CMO with a price that the Exchange fixes at the Midpoint that prevails at the time of entry (a “Fixed” CMO, discussed below). In the case of a CMO entered as a *Peg Managed Order in accordance with Rule 4703(d)*, and which has a price that the System updates in accordance with post-entry shifts in the Midpoint (a “Managed” CMO, also discussed below), the System will automatically re-submit a new CMO on behalf of the user after cancelling the original CMO.

Additionally, because a CMO inherently possesses the Midpoint Pegging Attribute, it will behave in accordance with Rule 4703(d), which governs Orders with Midpoint Pegging.<sup>9</sup> Thus, consistent with Rule 4703(d), the following behavior applies to CMOs:

- A CMO user may only enter a CMO Order during Market Hours.
- A CMO user may specify that a CMO peg to the Midpoint in one of two ways, either with fixed pegging (a “Fixed CMO”) or with managed pegging (a “Managed CMO”).
- For a Fixed CMO, the System will fix the price of the CMO at the Midpoint prevailing at the time of Order entry. After posting to the Exchange Book, the

price of a Fixed CMO will not thereafter be adjusted based on changes to the Inside Bid or Offer. However, the System will cancel a Fixed CMO after initial entry and posting to the Exchange Book if any of following conditions are met (in addition to those cancellation conditions that will apply specifically to CMOs in the proposed rule): (i) there is no Inside Bid and/or Inside Offer; (ii) the Fixed CMO to buy (sell) is entered with a limit price above (below) the Midpoint and is ranked at the Midpoint, and thereafter, the Inside Bid and/or Inside Offer change so that the Midpoint changes and the Fixed CMO is no longer at the Midpoint; (iii) the Fixed CMO to buy (sell) is entered at a limit price that is equal to or less than (greater than) the Midpoint and is ranked at its limit price; thereafter, the Inside Bid and/or Inside Offer change so that the Midpoint is lower (higher) than the limit price of the Fixed CMO; (iv) the Fixed CMO to buy (sell) is entered at a limit price that is equal to or less than (greater than) the Midpoint and is ranked at its limit price, and thereafter, the Inside Bid and Inside Offer become crossed, such that the Midpoint of the crossed Quotation remains equal to or higher (lower) than the limit price of the Fixed CMO, and then a new sell (buy) Order is received at a price that locks or crosses the limit price of the resting Fixed CMO; or (v) the Fixed CMO to buy (sell) is entered at a limit price that is greater than (less than) the Midpoint and is therefore ranked at the Midpoint, and thereafter, the Inside Bid and Inside Offer become crossed but the Midpoint does not change, and then a new sell (buy) Order is received at a price that locks or crosses the Midpoint of the Inside Bid and Inside Offer.<sup>10</sup>

- A Managed CMO<sup>11</sup> will have its price set upon initial entry and will thereafter have its price reset in accordance with changes to the relevant Inside Quotation. A Managed CMO will receive a new timestamp whenever its price is updated and therefore will be evaluated with respect to possible execution (and routing, if it has been assigned a Routing Order Attribute) in the same manner as a newly entered Order. If the price to which a Managed CMO is pegged becomes unavailable, pegging would lead to a price at which the Managed CMO cannot be posted, or

if the Inside Bid and Inside Offer become crossed, then the System will cancel the Managed CMO back to the participant if assigned a Routing Order Attribute. If Managed CMO is not assigned a Routing Order Attribute, and the price to which it is pegged becomes unavailable, pegging would lead to a price at which the Managed CMO cannot be posted, or if the Inside Bid and Inside Offer become crossed, then the Managed CMO will be removed from the Exchange Book and will be re-entered once there is a permissible price, provided however, that the System will cancel the Managed CMO if no permissible pegging price becomes available within one second after the Managed CMO was removed and no longer available on the Exchange Book (the Exchange may, in the exercise of its discretion modify the length of this one second time period by posting advance notice of the applicable time period on its website).<sup>12</sup>

- If at the time of entry, there is no price to which a Managed CMO, that has not been assigned a Routing Order Attribute or a Time in Force of Immediate-or-Cancel, can be pegged or pegging would lead to a price at which the Order cannot be posted, or if the Inside Bid and Inside Offer are Crossed, then the CMO will not be immediately available on the Exchange Book and will be entered once there is a permissible price provided however, that the System will cancel the Managed CMO if no permissible pegging price becomes available within one second after Order entry (the Exchange may, in the exercise of its discretion, modify the length of this one second time period by posting advance notice of the applicable time period on its website).

- For a Managed CMO Order that has been assigned a Routing Order Attribute, if there is no permissible price to which the Order can be pegged at the time of entry, pegging would lead to a price at which the Order cannot be posted, or the Inside Bid and Inside Offer are crossed, the Order will be rejected.

- A CMO will have its price set upon initial entry to the Midpoint, unless the CMO has a limit price, and that limit price is lower than the Midpoint for a CMO to buy (higher than the Midpoint for CMO to sell), in which case the Order will be ranked on the Exchange Book at its limit price. If the Inside Bid and Inside Offer are locked, a CMO will be priced at the locking price; and for Fixed CMOs, if the Inside Bid and Inside Offer are crossed or if there is no

<sup>9</sup>In part, this proposal references Rule text that the Exchange amended in a recent filing with the Commission but which the Exchange has yet to implement. See Securities Exchange Act Release No. 34-95768 (September 14, 2022), 87 FR 57534 (September 20, 2022) (SR-NASDAQ-2022-051); Securities Exchange Act Release No. 34-96341 (November 17, 2022), 87 FR 71712 (November 23, 2022) (delaying implementation of SR-NASDAQ-2022-051). To the extent that the Commission approves the proposal for adoption of the CMO and CMO+PO prior to implementation of SR-NASDAQ-2022-051, the Exchange may act to implement those features of the CMO and CMO+PO that do not require the availability of the Rule text amendments set forth in SR-NASDAQ-2022-051 to operate—namely, those features applicable to a Fixed CMO and Fixed CMO+PO. The Exchange will specify in an ETA exactly which features of the CMO and CMO+PO will be available to participants as of the initial implementation date and which of them will be available only as of the date of implementation of SR-NASDAQ-2022-051. A present, the Exchange expects that SR-NASDAQ-2022-051 will be ready for full implementation in the second or third quarter of 2023, although that time frame is subject to change.

<sup>10</sup> A user may enter a Fixed CMO using OUCH or FLITE. See Rule 4703(d).

<sup>11</sup> The features of Managed CMOs and Managed CMO+POs cross-reference a version of Rule 4703(d) that is set forth in SR-NASDAQ-2022-051 and not yet implemented. Thus, Managed CMOs and Managed CMO+POs will not be available for use prior to implementation of SR-NASDAQ 2022-051. See n.10, *supra*.

<sup>12</sup> A user may enter a Managed CMO using RASH, FIX, QIX, or OUCH. See Rule 4703(d).

Inside Bid and/or Inside Offer, the Fixed CMO will not be accepted. However, even if the Inside Bid and Inside Offer are locked, an Order with CMO that locked an Order on the Exchange Book would execute.

- If a CMO has been assigned a Discretion Order Attribute, the CMO may execute at any price within the discretionary price range, even if beyond the limit price specified with respect to the Midpoint Pegging Order Attribute. If CMO is priced at its limit price, the price of the CMO may nevertheless be changed to a less aggressive price based on changes to the Inside Quotation.

- Like other Orders with Pegging, CMOs are subject to a collar. Any portion of a CMO with a Routing attribute to buy (sell) that could execute, either on the Exchange or when routed to another market center, at a price of more than the greater of \$0.25 or 5 percent higher (lower) than the NBO (NBB) at the time when the order reaches the System (the “Collar Price”), will be cancelled. A CMO entered without a Routing attribute will be cancelled, if it would, as a result of the price determined by a Pegging Attribute, execute or post to the Exchange Book at a price through the Collar Price.

- The System will cancel CMOs when a trading halt is declared, and the System will reject any CMOs entered during a trading halt.

As noted above, a CMO will not be accepted outside of Market Hours, but it will be eligible to participate in the Nasdaq Closing Cross. A CMO remaining unexecuted after the Nasdaq Closing Cross occurs will be cancelled by the System unless, in the case of a Fixed CMO, the user selects a Time in Force for the Fixed CMO that provides for it to persist thereafter.

A CMO user may opt to apply the Minimum Quantity, Trade Now, or Discretion Order Attributes to a CMO. Again, the Non-Display and Midpoint Pegging Attributes always apply to CMOs.

A CMO+PO will possess all of the characteristics and attributes of a CMO, as described above, as well as those of a Midpoint Peg Post-Only Order, as set forth in Rule 4702(b)(5), with certain exceptions set forth below.

Like a Midpoint Peg Post-Only Order, a CMO+PO is a non-displayed Order that is priced at the Midpoint and executes upon entry only in circumstances where economically beneficial to the party entering the Order. If a CMO+PO has a Fixed Midpoint, then it may be adjusted after initial entry and posting to the Exchange Book. The price at which a Fixed

CMO+PO is ranked on the Nasdaq Book is the midpoint between the NBBO, unless the Order has a limit price that is lower than the midpoint between the NBBO for an Order to buy (higher than the midpoint between the NBBO for an Order to sell), in which case the Order will be ranked on the Nasdaq Book at its limit price. The price of the Fixed CMO+PO will not thereafter be adjusted based on changes to the NBBO. However, a Fixed CMO+PO will be cancelled back to the Participant after initial entry and posting to the Nasdaq Book if any of the following conditions are met:

- There is no National Best Bid and/or National Best Offer;

- The Fixed CMO+PO to buy (sell) is entered with a limit price above (below) the Midpoint of the NBBO and is ranked at the Midpoint of the NBBO; thereafter, the NBBO changes so that the Midpoint changes and the Fixed CMO+PO is no longer at the NBBO Midpoint;

- The Fixed CMO+PO to buy (sell) is entered at a limit price that is equal to or less than (greater than) the Midpoint of the NBBO and is ranked at its limit price; thereafter, the NBBO changes so that the Midpoint of the NBBO is lower (higher) than the limit price of the Fixed CMO+PO;

- The Fixed CMO+PO to buy (sell) is entered at a limit price that is equal to or less than (greater than) the Midpoint of the NBBO and is ranked at its limit price, thereafter the NBBO becomes crossed, such that the Midpoint of the crossed NBBO remains equal to or higher (lower) than the limit price of the Fixed CMO+PO, and then a new sell (buy) Order is received at a price that locks or crosses the limit price of the resting Fixed CMO+PO; or

- The Fixed CMO+PO to buy (sell) is entered at a limit price that is greater than (less than) the Midpoint of the NBBO and is therefore ranked at the Midpoint of the NBBO, thereafter the NBBO becomes crossed but the Midpoint does not change, and then a new sell (buy) Order is received at a price that locks or crosses the Midpoint of the NBBO.

If a CMO+PO has a Managed Midpoint, then also like a Midpoint Peg Post-Only Order, the price of the CMO+PO will be updated repeatedly to equal the midpoint between the NBBO; provided, however, that the CMO+PO will not be priced higher (lower) than its limit price. In the event that the midpoint between the NBBO becomes higher than (lower than) the limit price of a CMO+PO to buy (sell), the price of the CMO+PO will stop updating and the CMO+PO will post (with a Non-Display Attribute) at its limit price, but will

resume updating if the midpoint becomes lower than (higher than) the limit price of the CMO+PO to buy (sell). Similarly, if a CMO+PO is on the Nasdaq Book and subsequently the NBBO is crossed, or if there is no NBBO, the Order will be removed from the Nasdaq Book and will be re-entered at the new midpoint once there is a valid NBBO that is not crossed. The CMO+PO receives a new timestamp each time its price is changed.

Like a Midpoint Peg Post-Only Order, but unlike an ordinary CMO, a CMO+PO will not be eligible to participate in the Nasdaq Opening Cross, Closing Cross, or Halt Cross, and all CMO+POs will be cancelled if they remain on the Exchange Book at the end of Market Hours.<sup>13</sup> Also like a Midpoint Peg Post-Only Order, but unlike an ordinary CMO, a CMO+PO may not possess the Discretion or Routing Order Attributes, and a CMO+PO must be priced at more than \$1 per share. Finally, unlike a Midpoint Peg Post-Only Order, RASH may be used to enter a CMO+PO with a Time in Force of IOC (as well as OUCH, which can be used for such purposes with respect to a MPPO), and in such cases the Order will be canceled after determining whether it can be executed.

CMO and CMO+PO executions will be reported to Securities Information Processors and provided in the Exchange’s proprietary data feed without any new or special indication.

As part of the surveillance the Exchange currently performs, CMOs and CMO+POs will be subject to real-time surveillance to determine if they are being abused by market participants. The Exchange is committed to determining whether there is opportunity or prevalence of behavior that is inconsistent with normal risk management behavior. Manipulative abuse is subject to potential disciplinary action under the Exchange’s Rules, and other behavior that is not necessarily manipulative but nonetheless frustrates the purposes of the CMO or CMO+PO may be subject to penalties or other participant requirements to discourage such behavior, should it occur.<sup>14</sup>

The Exchange plans to implement CMO and CMO+PO within thirty days after Commission approval of the

<sup>13</sup> A CMO+PO entered prior to the beginning of Market Hours will be rejected. A CMO+PO will be cancelled by the System when a trading halt is declared, and any CMO+PO entered during a trading halt will be rejected.

<sup>14</sup> Punitive fees or other participant requirements tied to CMO and CMO+PO usage will be implemented by rule filing under Section 19(b) of the Act, 15 U.S.C. 78s(b), should the Exchange determine that they are necessary to maintain a fair and orderly market.

proposal. The Exchange will make the CMO and CMO+PO available to all members and to all securities upon implementation. The Exchange will announce the implementation date by Equity Trader Alert.<sup>15</sup>

## 2. Statutory Basis

The Exchange believes that its proposal is consistent with Section 6(b) of the Act,<sup>16</sup> in general, and furthers the objectives of Section 6(b)(5) of the Act,<sup>17</sup> in particular, in that it is designed to promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general to protect investors and the public interest. In particular, the proposal is consistent with the Act because it would create additional options with respect to how participants can manage trading at the Midpoint. These additional options allow participants to more finely tune their interactions in the market, which can lead to more efficient trading opportunities on the Exchange for investors with similar investment objectives.<sup>18</sup> Much like the analogous M–ELO Order Type, which Nasdaq introduced a few years ago, CMO and CMO+PO would provide market participants with a means to avoid certain execution scenarios which they may deem unfavorable. Unlike M–ELO, however, which imposes a waiting period upon participants to bring like-minded participants together, the CMO and CMO+PO would have no such waiting period. That is, the Exchange designed CMO and CMO+PO for participants that want Midpoint executions, but have a greater urgency to execute their orders and are not concerned about interacting with other participants acting with similar urgency. At the same time, the CMO and CMO+PO will avoid interacting with orders that are likely to shift the midpoint even without a holding period by providing for the System to cancel a CMO or CMO+PO when faced with incoming Order that cross the Midpoint or are otherwise likely to cause a shift

in the Midpoint. For Fixed CMOs and CMO+POs, users could then choose to enter a new CMO to take advantage of a better ensuing Midpoint; for Managed CMOs and CMO+PO, the System will do this automatically.

The CMO and CMO+PO will be available for voluntary use by all Exchange members. Moreover, the proposal is not unfair to participants with incoming Orders that trigger cancellation of CMOs because exchange functionality which permits like-minded participants the ability to achieve their objectives in an efficient manner will improve overall execution quality on the market, to the benefit of all market participants. Moreover, the protections that these Order Types provide are narrowly tailored to mitigate the risk of adverse executions.<sup>19</sup>

Like all other Order Types, the Exchange will conduct real-time surveillance to monitor the use of CMOs and CMO+POs to ensure that such usage is appropriately tied to the intent of the Order Type. Transactions in CMOs and CMO+POs will be reported to the Securities Information Processor and will be provided in the Exchange's proprietary data feed in the same manner as all other transactions occurring on the Exchange, without any new or special indication that it is a CMO or CMO+PO execution. The Exchange believes that doing so is important to ensuring that investors are protected from any market impact that may occur if CMO executions were reported with a special indication.

The Exchange does not believe that the proposed CMO or CMO+PO will negatively affect the quality of the market. To the contrary, the Exchange believes that the addition of CMO and CMO+PO will draw new market participants to the Exchange's transparent and well-regulated market, including participants that were previously not utilizing M–ELOs or M–ELO+CBs. Moreover, like these other Order Types, the CMO and CMO+PO will allow investors an opportunity to find like-minded counterparties at the midpoint on the Exchange, while also

limiting executions users may deem unfavorable and providing opportunities for price improvement. Insofar as the CMO and CMO+PO would provide new options for participants to achieve efficient, high-quality midpoint executions, the CMO and CMO+PO stands to increase participation on the Exchange and to improve the quality of executions on the Exchange, to the benefit of all market participants.

### *B. Self-Regulatory Organization's Statement on Burden on Competition*

The Exchange does not believe that the proposed rule change will impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act.

The Exchange believes that the introduction of the CMO and CMO+PO will draw new market participants to the Exchange while also providing a new option for existing participants that wish to achieve benefits similar to M–ELO or M–ELO+CB—high-quality Midpoint executions—but do not wish for their Orders to be subject to a Holding Period or care about their counterparties being subject to the same. To the extent the proposed change is successful in attracting additional market participants or increasing existing participation on the Exchange, Nasdaq believes that the proposed change will promote competition among trading venues by making the Exchange a more attractive trading venue for investors and participants.

Additionally, adoption of the CMO and CMO+PO will not burden competition among market participants. The CMO and CMO+PO will be available to all Exchange members and it will be available on an optional basis. Thus, any member that seeks to avail itself of the benefits of a CMO or CMO+PO can choose accordingly. Although the proposal provides potential benefits for investors that select the CMO and CMO+PO, the Exchange believes that all market participants will benefit to the extent that this proposal contributes to a healthy and attractive market that is attentive to the needs of all types of investors.

The proposal also will not adversely impact market participants that choose not to use these Order Types because no changes need to be made to participants' systems to account for it. As discussed above, CMO and CMO+PO executions will be reported the same as other executions, without any new or special indicator.

In any event, the Exchange notes that it operates in a highly competitive market in which market participants can

<sup>15</sup> The Exchange plans to propose a fee structure for the CMO and CMO+PO in a subsequent Commission rule filing.

<sup>16</sup> 15 U.S.C. 78f(b).

<sup>17</sup> 15 U.S.C. 78f(b)(5).

<sup>18</sup> Cf. Securities Exchange Act Release No. 34–82825 (March 7, 2018), 83 FR 10937 (March 13, 2018) (SR–NASDAQ–2017–074) (approving the Midpoint Extended Life Order (“M–ELO”) because it could “create additional and more efficient trading opportunities on the Exchange for investors with longer investment time horizons, including institutional investors, and could provide these investors with an ability to limit the information leakage and the market impact that could result from their orders.”).

<sup>19</sup> Cf. Order Approving a Proposed Rule Change to Add a New Discretionary Limit Order Type Called D-Limit, Securities Exchange Act Release No. 34–89686 (August 26, 2020), 85 FR 54438 (September 1, 2020) (SR–IEX–2019–15) (“D-Limit orders will encourage long term investors to participate in the displayed exchange market by protecting them against one particular strategy employed by short term traders. It is not unfairly discriminatory for an exchange to address that advantage in a narrowly tailored manner that promotes investor protection and the public interest. Accordingly, the Commission concludes that IEX's proposal is not designed to permit unfair discrimination between customers, issuers, brokers, or dealers.”).

readily choose between competing venues if they deem participation in the Exchange's market is no longer desirable. In such an environment, the Exchange must carefully consider the impact that any change it proposes may have on its participants, understanding that it will likely lose participants to the extent a change is viewed as unfavorable by them. Because competitors are free to modify the incentives and structure of their markets, the Exchange believes that the degree to which modifying the market structure of an individual market may impose any burden on competition is limited. Last, to the extent the proposed change is successful in attracting additional market participants or additional activity by existing participants, the Exchange also believes that the proposed change will promote competition among trading venues by making the Exchange a more attractive trading venue for participants and investors.

*C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others*

No written comments were either solicited or received.

**III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action**

Within 45 days of the date of publication of this notice in the **Federal Register** or within such longer period up to 90 days (i) as the Commission may designate if it finds such longer period to be appropriate and publishes its reasons for so finding or (ii) as to which the Exchange consents, the Commission shall: (a) by order approve or disapprove such proposed rule change, or (b) institute proceedings to determine whether the proposed rule change should be disapproved.

**IV. Solicitation of Comments**

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

*Electronic Comments*

- Use the Commission's internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an email to [rule-comments@sec.gov](mailto:rule-comments@sec.gov). Please include File Number SR-NASDAQ-2022-077 on the subject line.

*Paper Comments*

• Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549-1090. All submissions should refer to File Number SR-NASDAQ-2022-077. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's internet website (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street NE, Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR-NASDAQ-2022-077 and should be submitted on or before February 1, 2023.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>20</sup>

**Sherry R. Haywood**,  
Assistant Secretary.

[FR Doc. 2023-00320 Filed 1-10-23; 8:45 am]

**BILLING CODE 8011-01-P**

**SECURITIES AND EXCHANGE COMMISSION**

[Investment Company Act Release No. 34796; 812-15397]

**Fidelity Multi-Strategy Credit Fund and Fidelity Diversifying Solutions LLC**

January 5, 2023.

**AGENCY:** Securities and Exchange Commission ("Commission" or "SEC").

<sup>20</sup> 17 CFR 200.30-3(a)(12).

**ACTION:** Notice.

Notice of an application under section 6(c) of the Investment Company Act of 1940 (the "Act") for an exemption from sections 18(a)(2), 18(c), and 18(i) of the Act, pursuant to sections 6(c) and 23(c) of the Act for certain exemptions from rule 23c-3 under the Act, and pursuant to section 17(d) of the Act and rule 17d-1 thereunder.

**SUMMARY OF APPLICATION:** Applicants request an order to permit certain registered closed-end management investment companies to issue multiple classes of shares and to impose asset-based service and/or distribution fees and early withdrawal charges.

**APPLICANTS:** Fidelity Multi-Strategy Credit Fund, and Fidelity Diversifying Solutions LLC.

**FILING DATES:** The application was filed on October 19, 2022, and amended on November 28, 2022 and December 13, 2022.

**HEARING OR NOTIFICATION OF HEARING:** An order granting the requested relief will be issued unless the Commission orders a hearing. Interested persons may request a hearing on any application by emailing the SEC's Secretary at [Secretaries-Office@sec.gov](mailto:Secretaries-Office@sec.gov) and serving the Applicants with a copy of the request by email, if an email address is listed for the relevant Applicant below, or personally or by mail, if a physical address is listed for the relevant Applicant below. Hearing requests should be received by the Commission by 5:30 p.m. on January 30, 2023, and should be accompanied by proof of service on the Applicants, in the form of an affidavit, or, for lawyers, a certificate of service. Pursuant to rule 0-5 under the Act, hearing requests should state the nature of the writer's interest, any facts bearing upon the desirability of a hearing on the matter, the reason for the request, and the issues contested. Persons who wish to be notified of a hearing may request notification by emailing the Commission's Secretary.

**ADDRESSES:** The Commission: [Secretaries-Office@sec.gov](mailto:Secretaries-Office@sec.gov). Applicant: Cynthia Lo Bessette, [cynthia.lo.bessette@fmr.com](mailto:cynthia.lo.bessette@fmr.com).

**FOR FURTHER INFORMATION CONTACT:** Terri Jordan, Branch Chief, at (202) 551-6825 (Division of Investment Management, Chief Counsel's Office).

**SUPPLEMENTARY INFORMATION:** For Applicants' representations, legal analysis, and conditions, please refer to Applicants' second amended and restated application, dated December 13, 2022, which may be obtained via the Commission's website by searching for the file number at the top of this

document, or for an Applicant using the Company name search field on the SEC's EDGAR system. The SEC's EDGAR system may be searched at <https://www.sec.gov/edgar/searchedgar/legacy/companysearch.html>. You may also call the SEC's Public Reference Room at (202) 551-8090.

For the Commission, by the Division of Investment Management, under delegated authority.

**Sherry R. Haywood,**  
Assistant Secretary.

[FR Doc. 2023-00326 Filed 1-10-23; 8:45 am]

BILLING CODE 8011-01-P

**SOCIAL SECURITY ADMINISTRATION**

[Docket No: SSA-2022-0068]

**Agency Information Collection Activities: Comment Request**

The Social Security Administration (SSA) publishes a list of information collection packages requiring clearance by the Office of Management and Budget (OMB) in compliance with Public Law 104-13, the Paperwork Reduction Act of 1995, effective October 1, 1995. This notice includes a revision of an OMB-approved information collection.

SSA is soliciting comments on the accuracy of the agency's burden estimate; the need for the information; its practical utility; ways to enhance its quality, utility, and clarity; and ways to minimize burden on respondents, including the use of automated collection techniques or other forms of information technology. Mail, email, or fax your comments and recommendations on the information collection(s) to the OMB Desk Officer and SSA Reports Clearance Officer at the following addresses or fax numbers. (OMB) Office of Management and Budget, Attn: Desk Officer for SSA

Comments: <https://www.reginfo.gov/public/do/PRAMain>. Submit your

comments online referencing Docket ID Number [SSA-2022-0068].

(SSA) Social Security Administration, OLCA, Attn: Reports Clearance Director, 3100 West High Rise, 6401 Security Blvd., Baltimore, MD 21235, Fax: 410-966-2830, Email address: [OR.Reports.Clearance@ssa.gov](mailto:OR.Reports.Clearance@ssa.gov)

Or you may submit your comments online through <https://www.reginfo.gov/public/do/PRAMain>, referencing Docket ID Number [SSA-2022-0068].

SSA submitted the information collection below to OMB for clearance. Your comments regarding this information collection would be most useful if OMB and SSA receive them 30 days from the date of this publication. To be sure we consider your comments, we must receive them no later than February 10, 2023. Individuals can obtain copies of this OMB clearance package by writing to [OR.Reports.Clearance@ssa.gov](mailto:OR.Reports.Clearance@ssa.gov).

*Privacy and Disclosure of Official Records and Information; Availability of Information and Records to the Public—20 CFR 401.40(b)&(c), 401.45, 401.55(b), 401.65(a), 401.100(a)&(b), 402.130, 402.185—0960-0566.*

Under the Privacy and Disclosure of Official Records and Information regulations, SSA has established methods in which the public can consent to and authorize the release of records protected under the Privacy Act of 1974, 5 U.S.C. 552a of the United States Code, and request records accessible through the Freedom of Information Act (FOIA), 5 U.S.C. 552.

**Consent for Release of Records**

SSA obtains the required consent(s) (with certain exceptions specified by law) from anyone requesting information in SSA systems of records about another individual. We will not release information requested about an individual until we obtain the required consent from that individual. Under the Privacy Act of 1974 (5 U.S.C. 552a(b)), individuals may give SSA written

consent to disclose their personal information to a third party of their choosing. In addition, individuals may have multiple needs for the disclosure of their personal information, such as for qualification for a mortgage or preemployment screenings.

a. *Form SSA-3288 (Consent for Release of Information):* Form SSA-3288, is SSA's preferred paper form for requests for disclosure of information based on the consent of the subject of the record. Respondents can download the SSA-3288 from [ssa.gov/forms](https://ssa.gov/forms), obtain a copy at a local SSA field office, or request SSA mail a copy to them directly. Use of this form ensures compliance with SSA consent regulations at 20 CFR 401.100. SSA also collects consent on other writings, including non-SSA forms often used by large employers, that incorporate SSA-approved consent language.

b. *Form SSA-3288-OP1 (Consent for Disclosure of Records Protected Under the Privacy Act):* The Form SSA-3288-OP1 will comply with the CASES Act, OMB M-21-04, and SSA consent regulations at 20 CFR 401.100.

The CASES Act directed OMB to develop templates for, among other things, electronic consents for SSA to disclose records protected by the Privacy Act of 1974 to third parties. OMB implemented that statutory directive in memorandum M-21-04. SSA developed the SSA-3288-OP pursuant to the CASES Act and M-21-04. The public will access the webform application that populates Form SSA-3288-OP1 on the internet by selecting the "Electronic Request for Consent to Disclose" link which will be posted at [www.ssa.gov/privacy](https://www.ssa.gov/privacy).

The respondents are individuals consenting to, authorizing, and requesting SSA disclosure of records protected by the Privacy Act of 1974 to third parties.

*Type of Request:* Revision of an OMB-approved information collection.

Modality of completion	Number of respondents	Frequency of response	Average burden per response (minutes)	Estimated total annual burden (hours)	Average theoretical hourly cost amount (dollars)*	Average wait time in field office (minutes)**	Total annual opportunity cost (dollars)***
a. Amendment of Records .....	100	1	10	17	*\$28.01	** 24	*** \$1,547
b. Consent for Release of Information (SSA-3288) + .....	2,960,419	1	5	246,702	* 28.01	** 24	*** 40,078,669
c. Consent for Release of Records (Electronic SSA-3288-OP1) + .....	40,341	1	10	6,724	* 28.01	** 24	*** 640,309
Totals .....	3,000,860	.....	.....	253,443	.....	.....	*** 40,720,525

\* The number of respondents for this modality is an estimate based on google analytics data for the SSA-3288 form downloads from SSA.Gov.

\*\* We based this figure on average U.S. worker's hourly wages, as reported by Bureau of Labor Statistics data [https://www.bls.gov/oes/current/oes\\_nat.htm](https://www.bls.gov/oes/current/oes_nat.htm).

\*\*\* We based this figure on the average FY 2022 wait times for field offices, based on SSA's current management information data.

\*\*\* This figure does not represent actual costs that SSA is imposing on recipients of Social Security payments to complete this application; rather, these are theoretical opportunity costs for the additional time respondents will spend to complete the application. *There is no actual charge to respondents to complete the application.*

Dated: January 5, 2023.

**Naomi Sipple,**

*Reports Clearance Officer, Social Security Administration.*

[FR Doc. 2023-00315 Filed 1-10-23; 8:45 am]

**BILLING CODE 4191-02-P**

## DEPARTMENT OF STATE

[Public Notice 11963]

### International Security Advisory Board (ISAB) Meeting Notice; Closed Meeting

In accordance with section 10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App 10(a)(2), the Department of State announces a meeting of the International Security Advisory Board (ISAB) to take place on February 01, 2023, at the Department of State, Washington, DC.

Pursuant to section 10(d) of the Federal Advisory Committee Act, 5 U.S.C. App 10(d), and 5 U.S.C. 552b(c)(1), it has been determined that this Board meeting will be closed to the public because the Board will be reviewing and discussing matters properly classified in accordance with E.O. 13526. The purpose of the ISAB is to provide the Department with a continuing source of independent advice on all aspects of arms control, disarmament, nonproliferation, outer space, critical infrastructure, cybersecurity, the national security aspects of associated technologies, international security, and related aspects of public diplomacy. The agenda for this meeting will include classified discussions related to the Board's ongoing studies on current U.S. policy and issues regarding arms control, international security, nuclear proliferation, associated technologies, climate and energy security.

For more information, contact Michelle Dover, Executive Director of the International Security Advisory Board, Department of State, Washington, DC 20520, telephone: (202) 736-4930.

**Michelle Dover,**

*Executive Director, International Security Advisory Board, Department of State.*

[FR Doc. 2023-00324 Filed 1-10-23; 8:45 am]

**BILLING CODE 4710-27-P**

## SUSQUEHANNA RIVER BASIN COMMISSION

### Projects Approved for Consumptive Uses of Water

**AGENCY:** Susquehanna River Basin Commission.

**ACTION:** Notice.

**SUMMARY:** This notice lists Approvals by Rule for projects by the Susquehanna River Basin Commission during the period set forth in **DATES**.

**DATES:** December 1–31, 2022.

**ADDRESSES:** Susquehanna River Basin Commission, 4423 North Front Street, Harrisburg, PA 17110-1788.

**FOR FURTHER INFORMATION CONTACT:**

Jason E. Oyler, General Counsel and Secretary to the Commission, telephone: (717) 238-0423, ext. 1312; fax: (717) 238-2436; email: [joyler@srbc.net](mailto:joyler@srbc.net). Regular mail inquiries may be sent to the above address.

**SUPPLEMENTARY INFORMATION:** This notice lists the projects, described below, receiving approval for the consumptive use of water pursuant to the Commission's approval by rule process set forth in 18 CFR 806.22 (f) for the time period specified above:

#### Water Source Approval—Issued Under 18 CFR 806.22 f

1. Blackhill Energy LLC; Pad ID: JACKSON 1H Pad; ABR-201009053.R2; Springfield Township, Bradford County, Pa.; Consumptive Use of Up to 4.9900 mgd; Approval Date: December 8, 2022.

2. Chesapeake Appalachia, L.L.C.; Pad ID: Wissler Drilling Pad; ABR-201406005.R1.1; McNett Township, Lycoming County, Pa.; Consumptive Use of Up to 7.5000 mgd; Approval Date: December 8, 2022.

3. Chesapeake Appalachia, L.L.C.; Pad ID: Curtis New; ABR-201009100.R2; Asylum Township, Bradford County, Pa.; Consumptive Use of Up to 7.5000 mgd; Approval Date: December 12, 2022.

4. Chesapeake Appalachia, L.L.C.; Pad ID: Romisoukas Drilling Pad; ABR-201209021.R2; Canton Township, Bradford County, Pa.; Consumptive Use of Up to 7.5000 mgd; Approval Date: December 12, 2022.

5. Repsol Oil & Gas USA, LLC; Pad ID: STORCH (01 099) S; ABR-201209016.R2; Troy Township, Bradford County, Pa.; Consumptive Use of Up to 6.0000 mgd; Approval Date: December 12, 2022.

6. Repsol Oil & Gas USA, LLC; Pad ID: ZIMMERLI (05 074) D; ABR-201009079.R2; Orwell Township, Bradford County, Pa.; Consumptive Use of Up to 6.0000 mgd; Approval Date: December 12, 2022.

7. Seneca Resources Company, LLC; Pad ID: Empson 899; ABR-201009095.R2; Deerfield Township, Tioga County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: December 12, 2022.

8. SWN Production Company, LLC; Pad ID: Cooley (Pad 2); ABR-201209017.R2; Orwell Township, Bradford County, Pa.; Consumptive Use of Up to 4.9990 mgd; Approval Date: December 12, 2022.

9. EQT ARO LLC; Pad ID: Mallory Group Pad C; ABR-202212003; Plunketts Creek Township, Lycoming County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: December 14, 2022.

10. Repsol Oil & Gas USA, LLC; Pad ID: OLSON (02 101) K; ABR-201209024.R2; Hamilton Township, Tioga County, Pa.; Consumptive Use of Up to 6.0000 mgd; Approval Date: December 14, 2022.

11. Chesapeake Appalachia, L.L.C.; Pad ID: Craige; ABR-201010009.R2; Rush Township, Susquehanna County, Pa.; Consumptive Use of Up to 7.5000 mgd; Approval Date: December 22, 2022.

12. Chesapeake Appalachia, L.L.C.; Pad ID: Goll; ABR-201010016.R2; Ulster Township, Bradford County, Pa.; Consumptive Use of Up to 7.5000 mgd; Approval Date: December 22, 2022.

13. Chesapeake Appalachia, L.L.C.; Pad ID: Landmesser; ABR-201010019.R2; Towanda Township, Bradford County, Pa.; Consumptive Use of Up to 7.5000 mgd; Approval Date: December 22, 2022.

14. Chesapeake Appalachia, L.L.C.; Pad ID: Scrivener; ABR-201010005.R2; Rome Township, Bradford County, Pa.; Consumptive Use of Up to 7.5000 mgd; Approval Date: December 22, 2022.

15. Chesapeake Appalachia, L.L.C.; Pad ID: Sidonio; ABR-201010025.R2; Ulster Township, Bradford County, Pa.; Consumptive Use of Up to 7.5000 mgd; Approval Date: December 22, 2022.

16. Chesapeake Appalachia, L.L.C.; Pad ID: T. Brown Drilling Pad; ABR-201210006.R2; Lemon Township, Wyoming County, Pa.; Consumptive Use of Up to 7.5000 mgd; Approval Date: December 22, 2022.

17. Coterra Energy Inc.; Pad ID: Aldrich P1; ABR-201210002.R2; Gibson Township, Susquehanna County, Pa.; Consumptive Use of Up to 5.0000 mgd; Approval Date: December 22, 2022.

18. Coterra Energy Inc.; Pad ID: Lewis D P1; ABR-202212001; Bridgewater Township, Susquehanna County, Pa.; Consumptive Use of Up to 5.0000 mgd; Approval Date: December 22, 2022.

19. Coterra Energy Inc.; Pad ID: Pennay G P1; ABR-201709004.R1; Brooklyn Township, Susquehanna County, Pa.; Consumptive Use of Up to 5.0000 mgd; Approval Date: December 22, 2022.

20. Coterra Energy Inc.; Pad ID: Precision Capital LP P1; ABR–201709003.R1; Lathrop Township, Susquehanna County, Pa.; Consumptive Use of Up to 5.0000 mgd; Approval Date: December 22, 2022.

21. EQT ARO LLC; Pad ID: Mountain Meadow Lodge Pad A; ABR–201709006.R1; McIntyre Township, Lycoming County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: December 22, 2022.

22. Repsol Oil & Gas USA, LLC; Pad ID: COOK (05 040) C; ABR–201010021.R2; Orwell Township, Bradford County, Pa.; Consumptive Use of Up to 6.0000 mgd; Approval Date: December 22, 2022.

23. Repsol Oil & Gas USA, LLC; Pad ID: Kindon 374; ABR–201010002.R2; Union Township, Tioga County, Pa.; Consumptive Use of Up to 6.0000 mgd; Approval Date: December 22, 2022.

24. Seneca Resources Company, LLC; Pad ID: B08–Z; ABR–202212004; Shippen Township, Cameron County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: December 22, 2022.

25. Seneca Resources Company, LLC; Pad ID: Signor 578; ABR–201010023.R2; Charleston Township, Tioga County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: December 22, 2022.

26. SWN Production Company, LLC; Pad ID: Gypsy Hill-Eastabrook (Pad 5); ABR–201209018.R2; Orwell Township, Bradford County, Pa.; Consumptive Use of Up to 4.9990 mgd; Approval Date: December 22, 2022.

27. SWN Production Company, LLC; Pad ID: Rabago Birk (Pad 10); ABR–201209019.R2; Herrick Township, Bradford County, Pa.; Consumptive Use of Up to 4.9990 mgd; Approval Date: December 22, 2022.

28. SWN Production Company, LLC; Pad ID: Wootton East Well Pad; ABR–201209020.R2; Liberty Township, Susquehanna County, Pa.; Consumptive Use of Up to 4.9990 mgd; Approval Date: December 22, 2022.

29. Coterra Energy Inc.; Pad ID: BrayB P1; ABR–201210004.R2; Auburn Township, Susquehanna County, Pa.; Consumptive Use of Up to 5.0000 mgd; Approval Date: December 27, 2022.

30. Coterra Energy Inc.; Pad ID: BurtsL P1; ABR–201109026.R2; Forest Lake Township, Susquehanna County, Pa.; Consumptive Use of Up to 5.0000 mgd; Approval Date: December 27, 2022.

31. Coterra Energy Inc.; Pad ID: DeluciaR P1; ABR–201211002.R2; Harford Township, Susquehanna County, Pa.; Consumptive Use of Up to 5.0000 mgd; Approval Date: December 27, 2022.

32. Coterra Energy Inc.; Pad ID: RutkowskiB P1; ABR–201210003.R2; Lenox Township, Susquehanna County, Pa.; Consumptive Use of Up to 5.0000 mgd; Approval Date: December 27, 2022.

33. Coterra Energy Inc.; Pad ID: WellsP P1; ABR–201111023.R2; Bridgewater Township, Susquehanna County, Pa.; Consumptive Use of Up to 5.0000 mgd; Approval Date: December 27, 2022.

34. Pennsylvania General Energy Company, L.L.C.; Pad ID: SUSQ Cummings Pad E; ABR–202212002; Union Township, Tioga County, Pa.; Consumptive Use of Up to 4.5000 mgd; Approval Date: December 27, 2022.

35. Chesapeake Appalachia, L.L.C.; Pad ID: Lemoreview Farms; ABR–201010003.R2; Leroy Township, Bradford County, Pa.; Consumptive Use of Up to 7.5000 mgd; Approval Date: December 29, 2022.

36. EQT ARO LLC; Pad ID: Elbow F&G Pad B; ABR–201206007.R2; Cogan House Township, Lycoming County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: December 29, 2022.

37. Seneca Resources Company, LLC; Pad ID: Heath 418; ABR–201010011.R2; Delmar Township, Tioga County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: December 29, 2022.

38. Seneca Resources Company, LLC; Pad ID: Lopatofsky 287; ABR–201009091.R2; Charleston Township, Tioga County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: December 29, 2022.

39. Seneca Resources Company, LLC; Pad ID: Schimmel 830; ABR–201009090.R2; Farmington Township, Tioga County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: December 29, 2022.

40. Seneca Resources Company, LLC; Pad ID: Worden 571; ABR–201009092.R2; Charleston Township, Tioga County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: December 29, 2022.

41. Blackhill Energy LLC; Pad ID: KLINE A Pad; ABR–201210010.R2; Springfield Township, Bradford County, Pa.; Consumptive Use of Up to 4.9900 mgd; Approval Date: December 30, 2022.

42. Blackhill Energy LLC; Pad ID: KLINE B Pad; ABR–201210011.R2; Springfield Township, Bradford County, Pa.; Consumptive Use of Up to 4.9900 mgd; Approval Date: December 30, 2022.

43. Blackhill Energy LLC; Pad ID: WARD B Pad; ABR–201210009.R2; Springfield Township, Bradford County, Pa.; Consumptive Use of Up to 4.9900

mgd; Approval Date: December 30, 2022.

44. Coterra Energy Inc.; Pad ID: EllsworthA P1; ABR–201110015.R2; Bridgewater Township, Susquehanna County, Pa.; Consumptive Use of Up to 5.0000 mgd; Approval Date: December 30, 2022.

45. SWN Production Company, LLC; Pad ID: ENDLESS MOUNTAIN RECREATION; ABR–201209001.R2; New Milford Township, Susquehanna County, Pa.; Consumptive Use of Up to 4.9990 mgd; Approval Date: December 30, 2022.

The following project applications have had their review terminated under 18 CFR 806.22(f) and in accordance with Policy No. 2016–02, Guidelines for Terminating Review of a Project Application.

#### Termination of Review—Issued Under 18 CFR 806.22(f)

1. Norse Energy Corporation USA; Pad ID: Martin, C. #1H; NOI–2011–0581; McDonough Town, Chenango County, NY; Consumptive Use of Up to 5.5000 mgd; Termination Date: December 28, 2022.

2. Norse Energy Corporation USA; Pad ID: Norse-Housing #1H; NOI–2011–0582; Smyrna Town, Chenango County, NY; Consumptive Use of Up to 5.5000 mgd; Termination Date: December 28, 2022.

3. Norse Energy Corporation USA; Pad ID: Norwalk, R #1H—4H; NOI–2011–0583; Smithville Town, Chenango County, NY; Consumptive Use of Up to 5.5000 mgd; Termination Date: December 28, 2022.

Authority: Public Law 91–575, 84 Stat. 1509 *et seq.*, 18 CFR parts 806 and 808.

Dated: January 6, 2023.

**Jason E. Oyler,**  
General Counsel and Secretary to the Commission.

[FR Doc. 2023–00373 Filed 1–10–23; 8:45 am]

BILLING CODE 7040–01–P

## SUSQUEHANNA RIVER BASIN COMMISSION

### Projects Approved for Minor Modifications

**AGENCY:** Susquehanna River Basin Commission.

**ACTION:** Notice.

**SUMMARY:** This notice lists the minor modifications approved for a previously approved project by the Susquehanna River Basin Commission during the period set forth in **DATES**.

**DATES:** December 1–31, 2022.

**ADDRESSES:** Susquehanna River Basin Commission, 4423 North Front Street, Harrisburg, PA 17110-1788.

**FOR FURTHER INFORMATION CONTACT:** Jason E. Oyler, General Counsel and Secretary to the Commission, telephone: (717) 238-0423, ext. 1312; fax (717) 238-2436; email: [joyler@srbc.net](mailto:joyler@srbc.net). Regular mail inquiries may be sent to the above address.

**SUPPLEMENTARY INFORMATION:** This notice lists previously approved projects, receiving approval of minor modifications, described below, pursuant to 18 CFR 806.18 or to Commission Resolution Nos. 2013-11 and 2015-06 for the time period specified above.

1. Inflection Energy (PA) LLC (Loyalsock Creek), Docket No. 20221214, Upper Fairfield Township, Lycoming County, Pa.; approval to change intake design and location; Approval Date: December 28, 2022.  
*Authority:* Public Law 91-575, 84 Stat. 1509 *et seq.*, 18 CFR parts 806 and 808.

Dated: January 6, 2023.

**Jason E. Oyler,**  
*General Counsel and Secretary to the Commission.*

[FR Doc. 2023-00375 Filed 1-10-23; 8:45 am]

**BILLING CODE 7040-01-P**

## SUSQUEHANNA RIVER BASIN COMMISSION

### Grandfathering (GF) Registration Notice

**AGENCY:** Susquehanna River Basin Commission.

**ACTION:** Notice.

**SUMMARY:** This notice lists Grandfathering Registration for projects by the Susquehanna River Basin Commission during the period set forth in **DATES**.

**DATES:** December 1-31, 2022.

**ADDRESSES:** Susquehanna River Basin Commission, 4423 North Front Street, Harrisburg, PA 17110-1788.

**FOR FURTHER INFORMATION CONTACT:** Jason E. Oyler, General Counsel and Secretary to the Commission, telephone: (717) 238-0423, ext. 1312; fax: (717) 238-2436; email: [joyler@srbc.net](mailto:joyler@srbc.net). Regular mail inquiries may be sent to the above address.

**SUPPLEMENTARY INFORMATION:** This notice lists GF Registration for projects, described below, pursuant to 18 CFR part 806, subpart E, for the time period specified above:

1. Barney & Dickenson, Inc., GF Certificate No. GF-202212232, Town of

Vestal, Broome County, N.Y.; Main Storage Pond and combined withdrawal from Wells 1, 2, and 3; Issue Date: December 15, 2022.

2. City of Norwich—Public Water Supply System, GF Certificate No. GF-202212233, Towns of Norwich and New Berlin and City of Norwich, Chenango County, N.Y.; combined withdrawal from Wells 1 and 2, Well 3, and the Lower Reservoir; Issue Date: December 15, 2022.

3. Hardinge Inc., GF Certificate No. GF-202212234, Town of Horseheads, Chemung County, N.Y.; Wells 1, 2, and 3; Issue Date: December 15, 2022.

4. Hidden Valley Golf Course, Inc., GF Certificate No. GF-202212235, Wayne Township, Schuylkill County, Pa., Artesian Well, the Other On-site Well, and the Chateau (Upper) Pond; Issue Date: December 15, 2022.

5. Knight Settlement Sand & Gravel, LLC, GF Certificate No. GF-202212236, Town of Bath, Steuben County, N.Y.; Cohocton River and the Concrete Well; Issue Date: December 15, 2022.

6. The Pennsylvania State University—Public Water Supply System and University Campus Use, GF Certificate No. GF-202212237, College and Patton Townships and State College Borough, Centre County, Pa.; see Addendum; Issue Date: December 15, 2022.

7. Tower City Borough Authority—Public Water Supply System, GF Certificate No. GF-202212238, Porter Township, Schuylkill County, Pa.; Wells 1 and 3; Issue Date: December 15, 2022.

*Authority:* Public Law 91-575, 84 Stat. 1509 *et seq.*, 18 CFR parts 806 and 808.

Dated: January 6, 2023.

**Jason E. Oyler,**  
*General Counsel and Secretary to the Commission.*

[FR Doc. 2023-00374 Filed 1-10-23; 8:45 am]

**BILLING CODE 7040-01-P**

## SUSQUEHANNA RIVER BASIN COMMISSION

### Public Hearing

**AGENCY:** Susquehanna River Basin Commission.

**ACTION:** Notice.

**SUMMARY:** The Susquehanna River Basin Commission will hold a public hearing on February 2, 2023. The Commission will hold this hearing in-person and telephonically. At this public hearing, the Commission will hear testimony on the projects listed in the **SUPPLEMENTARY INFORMATION** section of this notice. Such

projects are intended to be scheduled for Commission action at its next business meeting, tentatively scheduled for March 16, 2023, which will be noticed separately. The public should take note that this public hearing will be the only opportunity to offer oral comment to the Commission for the listed projects. The deadline for the submission of written comments is February 13, 2023.

**DATES:** The public hearing will convene on February 2, 2023, at 6:30 p.m. The public hearing will end at 9:00 p.m. or at the conclusion of public testimony, whichever is earlier. The deadline for the submission of written comments is Monday, February 13, 2023.

**ADDRESSES:** This public hearing will be conducted in-person and virtually. You may attend in person at Susquehanna River Basin Commission, 4423 N Front St., Harrisburg, Pennsylvania or join by telephone using Toll Free Number 1-877-304-9269 and then entering guest passcode 2619070 followed by #.

**FOR FURTHER INFORMATION CONTACT:** Jason Oyler, General Counsel and Secretary to the Commission, telephone: (717) 238-0423 or [joyler@srbc.net](mailto:joyler@srbc.net). Information concerning the applications for the projects is available at the Commission's Water Application and Approval Viewer at <https://www.srbc.net/waav>. Additional supporting documents are available to inspect and copy in accordance with the Commission's Access to Records Policy at [www.srbc.net/regulatory/policies-guidance/docs/access-to-records-policy-2009-02.pdf](http://www.srbc.net/regulatory/policies-guidance/docs/access-to-records-policy-2009-02.pdf).

**SUPPLEMENTARY INFORMATION:** The public hearing will cover the following projects:

### Projects Scheduled for Action

1. *Project Sponsor:* Biglerville Borough Authority. *Project Facility:* Biglerville Borough Water Company, Biglerville Borough and Butler Township, Adams County, Pa. Application for renewal of groundwater withdrawal of up to 0.112 mgd (30-day average) from Well 7 (Docket No. 19930503).

2. *Project Sponsor and Facility:* BKV Operating, LLC (North Branch Wyalusing Creek), Middletown Township, Susquehanna County, Pa. Application for surface water withdrawal of up to 2.731 mgd (peak day).

3. *Project Sponsor and Facility:* Dillsburg Area Authority, Carroll Township, York County, Pa. Application for renewal of groundwater withdrawal of up to 0.460 mgd (30-day



average) from Well 7 (Docket No. 20070907).

4. *Project Sponsor and Facility:* Dover Township, York County, Pa. Application for renewal of groundwater withdrawal of up to 0.360 mgd (30-day average) from Well 8 (Docket No. 19911104).

5. *Project Sponsor and Facility:* First Quality Tissue, LLC (Bald Eagle Creek), Allison, Bald Eagle, and Castanea Townships, Clinton County, Pa. Applications for renewal of surface water withdrawal of up to 10.500 mgd (peak day) and consumptive use of up to 2.500 mgd (peak day) (Docket No. 20080303).

6. *2022–094; 2020–017 Project Sponsor and Facility:* Hardinge Inc., Town of Horseheads, Chemung County, N.Y. Applications for groundwater withdrawals (30-day averages) of up to 0.550 mgd from Well 4 and renewal of 0.580 mgd from Well 5 (Docket No. 19900302).

7. *Project Sponsor:* Helix Ironwood, LLC. *Project Facility:* Ironwood Generating Station (Pennsy Quarry), South Lebanon Township, Lebanon County, Pa. Applications for renewal of surface water withdrawal of up to 4.500 mgd (peak day) and consumptive use of up to 4.500 mgd (peak day) (Docket No. 19980502).

8. *Project Sponsor and Facility:* Mount Union Municipal Authority, Wayne Township, Mifflin County, Pa. Application for renewal of groundwater withdrawal of up to 0.432 mgd (30-day average) from Well #3—Lemkelde (Docket No. 20070303).

9. *Project Sponsor and Facility:* Repsol Oil & Gas USA, LLC (Fall Brook), Ward Township, Tioga County, Pa. Application for renewal of surface water withdrawal of up to 0.999 mgd (peak day) (Docket No. 20180303).

10. *Project Sponsor and Facility:* Repsol Oil & Gas USA, LLC (Fellows Creek), Ward Township, Tioga County, Pa. Application for renewal of surface water withdrawal of up to 0.999 mgd (peak day) (Docket No. 20180304).

11. *Project Sponsor and Facility:* Seneca Resources Company, LLC (Arnot No. 5 Mine Discharge), Bloss Township, Tioga County, Pa. Application for renewal of surface water withdrawal of up to 0.499 mgd (peak day) (Docket No. 20180305).

12. *Project Sponsor and Facility:* Seneca Resources Company, LLC (Cowanesque River), Deerfield Township, Tioga County, Pa. Application for renewal with modification to increase the surface water withdrawal by an additional 0.661 mgd, for a total of up to 1.600 mgd (peak day) (Docket No. 20220920).

13. *Project Sponsor and Facility:* Seneca Resources Company, LLC (Susquehanna River), Sheshequin Township, Bradford County, Pa. Application for renewal of surface water withdrawal of up to 0.850 mgd (peak day) (Docket No. 20180306).

14. *Project Sponsor:* Springwood, LLC. *Project Facility:* Bridgewater Golf Club, York Township, York County, Pa. Application for renewal of consumptive use of up to 0.099 mgd (30-day average) (Docket No. 20080307).

15. *Project Sponsor and Facility:* SWN Production Company, LLC (Susquehanna River), Great Bend Township, Susquehanna County, Pa. Application for renewal of surface water withdrawal of up to 1.500 mgd (peak day) (Docket No. 20180307).

16. *Project Sponsor and Facility:* Wise Foods, Inc., Berwick Borough, Columbia County, Pa. Application for renewal of groundwater withdrawal of up to 0.860 mgd (30-day average) from Well PW–1 (Docket No. 19920502).

17. *Project Sponsor:* Wynding Brook Inc. *Project Facility:* Wynding Brook Golf Club, Turbot Township, Northumberland County, Pa. Application for renewal of consumptive use of up to 0.099 mgd (30-day average) (Docket No. 20080304).

#### **Project Scheduled for Action Involving a Diversion**

18. *Project Sponsor:* Helix Ironwood, LLC. *Project Facility:* Ironwood Generating Station, South Lebanon Township, Lebanon County, Pa. Application for renewal of approval of an out-of-basin diversion of up to 4.500 mgd (peak day) (Docket No. 19980502).

#### **Commission-Initiated Project Approval Modification**

19. *Project Sponsor:* Knouse Foods Cooperative, Inc. *Project Facility:* Peach Glen Plant, Tyrone and Huntington Townships, Adams County, and Dickinson Township, Cumberland County, Pa. Conforming the grandfathered amount with the forthcoming determination for groundwater withdrawals (30-day averages) of up to 0.327 mgd combined from Wells 2, 4, 5, 7, 8, 9, 10, and 13, and up to 0.046 mgd from Well 13 (Docket No. 20040912).

#### **Opportunity To Appear and Comment**

Interested parties may call into the hearing to offer comments to the Commission on any business listed above required to be the subject of a public hearing. Given the nature of the meeting, the Commission strongly encourages those members of the public wishing to provide oral comments to

pre-register with the Commission by emailing Jason Oyler at [joyler@srbc.net](mailto:joyler@srbc.net) prior to the hearing date. The presiding officer reserves the right to limit oral statements in the interest of time and to otherwise control the course of the hearing. Access to the hearing via telephone will begin at 6:15 p.m. Guidelines for the public hearing are posted on the Commission's website, [www.srbc.net](http://www.srbc.net), prior to the hearing for review. The presiding officer reserves the right to modify or supplement such guidelines at the hearing. Written comments on any business listed above required to be the subject of a public hearing may also be mailed to Mr. Jason Oyler, Secretary to the Commission, Susquehanna River Basin Commission, 4423 North Front Street, Harrisburg, Pa. 17110–1788, or submitted electronically through <https://www.srbc.net/regulatory/public-comment/>. Comments mailed or electronically submitted must be received by the Commission on or before February 13, 2023, to be considered.

*Authority:* Pub. L. 91–575, 84 Stat. 1509 *et seq.*, 18 CFR parts 806, 807, and 808.

Dated: January 6, 2023.

**Jason E. Oyler,**

*General Counsel and Secretary to the Commission.*

[FR Doc. 2023–00377 Filed 1–10–23; 8:45 am]

**BILLING CODE 7040–01–P**

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Motor Carrier Safety Administration**

[Docket No. FMCSA–2022–0195]

#### **National Registry of Certified Medical Examiners: 10-Year Refresher Training and Recertification Testing Requirements**

**AGENCY:** Federal Motor Carrier Safety Administration (FMCSA), Department of Transportation (DOT).

**ACTION:** Notice of implementation of medical examiner 10-year refresher training and recertification testing.

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**SUMMARY:** FMCSA announces implementation of the regulatory requirement that all medical examiners certified and listed on the Agency's National Registry of Certified Medical Examiners (National Registry) maintain their certification by completing refresher training 4 to 5 and 9 to 10 years after certification and passing a recertification test 10 years after certification. The 5-year refresher training has been implemented and

FMCSA is now proceeding with the 10-year training and testing. The required 10-year refresher training will be delivered by private sector training organizations in the same manner as the initial National Registry medical examiner training. The 10-year recertification test will be provided by the two FMCSA-approved testing organizations in the same manner as the initial National Registry medical examiner certification test. Medical examiners will be able to upload proof of completion of the 10-year training to their National Registry accounts and be eligible to take the 10-year recertification test starting January 1, 2023.

**DATES:** This announcement is effective on January 11, 2023.

**FOR FURTHER INFORMATION CONTACT:** Ms. Christine A. Hydock, Chief, Medical Programs Division, (202) 366-4001, [fmcsamedical@dot.gov](mailto:fmcsamedical@dot.gov), FMCSA, DOT, 1200 New Jersey Avenue SE, Room W64-224, Washington, DC 20590-0001. Office hours are 8:30 a.m. to 5 p.m. ET, Monday through Friday, except Federal holidays. If you have questions regarding viewing material in the docket, contact Dockets Operations, (202) 366-9826.

**SUPPLEMENTARY INFORMATION:**

**I. Legal Basis**

Section 31149(d) of Title 49 of the United States Code, enacted by section 4116(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, Public Law 109-59, 119 Stat. 1144, 1726 (Aug. 10, 2005), required FMCSA to establish and maintain a current national registry of certified medical examiners qualified to perform medical examinations and issue medical certificates. In addition, FMCSA was to develop requirements to become a medical examiner that included the completion of specific courses and materials, as well as passing a test (49 U.S.C. 31149(c)(1)(D)(i) and (iii))

In 2012, FMCSA issued a final rule establishing the National Registry (77 FR 24104). This rule also established training and testing requirements for medical professionals who conduct physical qualification examinations of interstate commercial motor vehicle drivers. To maintain certification and listing on the National Registry, medical examiners are required to complete periodic training specified by FMCSA no sooner than 4 years and no later than 5 years after the date of issuance of the medical examiner certification credential by FMCSA, and to complete periodic training and receive a passing

score on the National Registry medical examiner certification test no sooner than 9 years and no later than 10 years after the date of the certification credential issued by FMCSA.

**II. Background**

In 2018, FMCSA initiated development of improvements to the National Registry system. The first medical examiners certified and listed on the National Registry were required by regulation to complete 5-year refresher training in January 2018. Because the information technology system improvements were not yet completed, FMCSA was unable to deliver the 5-year refresher training to meet that deadline. On July 14, 2022, FMCSA issued the 5-year refresher training to all medical examiners who were either past due or currently due for the training using their National Registry accounts. FMCSA notified eligible medical examiners who were past due for the training that they have until December 31, 2022, to complete the training.

**III. 10-Year Refresher Training and Recertification Testing**

Because of the delay issuing the 5-year refresher training and the extended timeframe offered for completion of that training, the programming to process the 10-year refresher training and recertification testing in the National Registry was also delayed. This functionality will be available starting on January 1, 2023. To ensure that all medical examiners have a full year to complete the required 10-year refresher training and pass the recertification test, medical examiners whose National Registry certification expires in 2023 (affected medical examiners) will have until December 31, 2023, to complete the 10-year refresher training and pass the recertification test. FMCSA will not take action against affected medical examiners, provided that they complete the training and pass the recertification test as specified in this notice.

The 5-year refresher training developed and issued by FMCSA and previously released to all medical examiners who were either due or past due for their 5-year refresher training will be made available as a resource to all training organizations that intend to provide the National Registry medical examiner 10-year refresher training. The 5-year refresher training will be posted on the Resource Center page of the National Registry website at <https://nationalregistry.fmcsa.dot.gov/resource-center>. In addition, training organizations can request a copy by contacting the National Registry

Technical Support Help Desk at [fmctechsup@dot.gov](mailto:fmctechsup@dot.gov) or (617) 494-3003. FMCSA encourages all training organizations to obtain a copy and incorporate the content of the 5-year refresher training into the National Registry training they provide.

The 10-year refresher training will be provided by private sector training organizations in the same manner as the initial National Registry medical examiner training required for certification. Medical examiners will contact a private sector training organization directly to schedule and complete the 10-year refresher training. After successfully completing the training and uploading proof of training completion (*i.e.*, training certificate) to their National Registry accounts on or after January 1, 2023, medical examiners will be eligible to take the 10-year recertification test. Note that medical examiners will not be able to upload proof of training and will not be able to take the 10-year recertification test until January 1, 2023, even if they completed the 10-year refresher training before January 1, 2023. The 10-year recertification test will be provided by the two FMCSA-approved testing organizations (Prometric and PSI) in the same manner as the initial National Registry medical examiner certification test.

**Robin Hutcheson,**  
Administrator.

[FR Doc. 2023-00385 Filed 1-10-23; 8:45 am]

**BILLING CODE 4910-EX-P**

**DEPARTMENT OF THE TREASURY**

**Office of Foreign Assets Control**

**Notice of OFAC Sanctions Action**

**AGENCY:** Office of Foreign Assets Control, Treasury.

**ACTION:** Notice.

**SUMMARY:** The U.S. Department of the Treasury's Office of Foreign Assets Control (OFAC) is publishing the names of one or more persons that have been placed on OFAC's Specially Designated Nationals and Blocked Persons List (SDN List) based on OFAC's determination that one or more applicable legal criteria were satisfied. All property and interests in property subject to U.S. jurisdiction of these persons are blocked, and U.S. persons are generally prohibited from engaging in transactions with them.

**DATES:** See **SUPPLEMENTARY INFORMATION** section for effective date(s).

**FOR FURTHER INFORMATION CONTACT:**  
OFAC: Andrea Gacki, Director, tel.: 202-622-2490; Associate Director for Global Targeting, tel.: 202-622-2420; Assistant Director for Licensing, tel.: 202-622-2480; Assistant Director for Regulatory Affairs, tel.: 202-622-4855; or Assistant Director for Sanctions

Compliance & Evaluation, tel.: 202-622-2490.

**SUPPLEMENTARY INFORMATION:**

**Electronic Availability**

The SDN List and additional information concerning OFAC sanctions programs are available on OFAC's website (<https://www.treasury.gov/ofac>).

**Notice of OFAC Action(s)**

On January 6, 2023, OFAC determined that the property and interests in property subject to U.S. jurisdiction of the following persons are blocked under the relevant sanctions authority listed below.

**Individuals**

1. ARLANIZADEH, Vali (Arabic: ولی ارلنی زاده) (a.k.a. ARLANI ZADEH, Vali), Iran; DOB 22 Nov 1979; nationality Iran; Additional Sanctions Information - Subject to Secondary Sanctions; Gender Male; National ID No. 2802738003 (Iran) (individual) [NPWMD] [IFSR] (Linked To: QODS AVIATION INDUSTRIES).

Designated pursuant to section 1(a)(iv) of Executive Order 13382 of June 28, 2005, "Blocking Property of Weapons of Mass Destruction Proliferators and Their Supporters," 70 FR 38567 (E.O. 13382) for acting or purporting to act for or on behalf of, directly or indirectly, QODS AVIATION INDUSTRIES.

2. DAMAVANDIAN, Ghassem (Arabic: قاسم دماوندیان) (a.k.a. DAMAVANDIAN, Qassem), Iran; DOB 02 May 1968; nationality Iran; Additional Sanctions Information - Subject to Secondary Sanctions; Gender Male; Passport G9336\_77 (Iran) expires 27 Oct 2019; National ID No. 0052944492 (Iran) (individual) [NPWMD] [IFSR] (Linked To: QODS AVIATION INDUSTRIES).

Designated pursuant to section 1(a)(iv) of E.O. 13382 for acting or purporting to act for or on behalf of, directly or indirectly, QODS AVIATION INDUSTRIES.

3. GHOREISHI, Seyed Hojjatollah (Arabic: سید حجت اله قریشی) (a.k.a. GHOREISHI, Sayyid Hojjatollah; a.k.a. GHOREISHI, Sayyid Hojjatollah; a.k.a. GHOREISHI, Seyed Hojjatollah; a.k.a. GHOREISHI, Seyyed Hojjatollah; a.k.a. GHOREISHI, Seyyed Hojjatollah; a.k.a. GHOREISZI, Seyed Hojjatollah E.; a.k.a. QOREISHI, Seyyed Hojjatollah; a.k.a. QORESHI, Seyyed Hojjatollah; a.k.a. QUREISHI, Seyed Hojjatollah), Iran; DOB 27 Sep 1964; nationality Iran; Additional Sanctions Information - Subject to Secondary Sanctions; Gender Male; Passport D10003923 (Iran) expires 15 Aug 2023 to 15 Aug 2024; alt. Passport N42881363 (Iran) expires 10 Oct 2022; alt. Passport D9021706 (Iran) expires 14 Jul 2021; alt. Passport D10007155 (Iran) expires 17 Aug 2025; alt. Passport A59655618 (Iran) expires 15 Sep 2027; National ID No. 5929869741 (Iran) (individual) [NPWMD] [IFSR] (Linked To: MINISTRY OF DEFENSE AND ARMED FORCES LOGISTICS; Linked To: QODS AVIATION INDUSTRIES).

Designated pursuant to section 1(a)(iv) of E.O. 13382 for acting or purporting to act for or on behalf of, directly or indirectly, the MINISTRY OF DEFENSE AND ARMED FORCES LOGISTICS.

Designated pursuant to section 1(a)(iv) of E.O. 13382 for acting or purporting to act for or on behalf of, directly or indirectly, QODS AVIATION INDUSTRIES.

4. KHAKI, Reza (Arabic: خاکی رضا), Iran; DOB 01 Aug 1970; nationality Iran; Additional Sanctions Information - Subject to Secondary Sanctions; Gender Male; Passport M38549339 (Iran) expires 05 Nov 2021; National ID No. 1199127795 (Iran) (individual) [NPWMD] [IFSR] (Linked To: QODS AVIATION INDUSTRIES).

Designated pursuant to section 1(a)(iv) of E.O. 13382 for acting or purporting to act for or on behalf of, directly or indirectly, QODS AVIATION INDUSTRIES.

5. NIYAZI-ANGILI, Majid Reza (Arabic: *مجید رضا نیازی انگیلی*) (a.k.a. NAYYARI ANGILI, Majid Rida; a.k.a. NIAZI ANGILI EBRAHIM, Majid Reza), Iran; DOB 23 Feb 1969; nationality Iran; Additional Sanctions Information - Subject to Secondary Sanctions; Gender Male; National ID No. 0030171628 (Iran) (individual) [NPWMD] [IFSR] (Linked To: QODS AVIATION INDUSTRIES).

Designated pursuant to section 1(a)(iv) of E.O. 13382 for acting or purporting to act for or on behalf of, directly or indirectly, QODS AVIATION INDUSTRIES.

6. SHARIFI-TEHRANI, Hamidreza (Arabic: *حمیدرضا شریفی تهرانی*) (a.k.a. SHARIFI-TEHRANI, Hamid Reza), Iran; DOB 06 Jul 1974; nationality Iran; Additional Sanctions Information - Subject to Secondary Sanctions; Gender Male; National ID No. 1285834070 (Iran) (individual) [NPWMD] [IFSR] (Linked To: QODS AVIATION INDUSTRIES).

Designated pursuant to section 1(a)(iv) of E.O. 13382 for acting or purporting to act for or on behalf of, directly or indirectly, QODS AVIATION INDUSTRIES.

7. SIAVASH, Nader Khoun (Arabic: *نادر خون سیاوش*) (a.k.a. SIAVASHI, Nader Khun (Arabic: *نادر خون سیاوشی*)), Iran; DOB 30 Apr 1963; nationality Iran; Additional Sanctions Information - Subject to Secondary Sanctions; Gender Male; National ID No. 0048894753 (Iran) (individual) [NPWMD] [IFSR] (Linked To: AEROSPACE INDUSTRIES ORGANIZATION).

Designated pursuant to section 1(a)(iv) of E.O. 13382 for acting or purporting to act for or on behalf of, directly or indirectly, AEROSPACE INDUSTRIES ORGANIZATION.

On January 6, 2023, OFAC published revised information for the following person on OFAC's SDN List.

#### Entity

1. QODS AVIATION INDUSTRIES (a.k.a. GHODS AVIATION INDUSTRIES; a.k.a. LIGHT AIRPLANES DESIGN AND MANUFACTURING INDUSTRIES; a.k.a. QODS RESEARCH CENTER), P.O. Box 15875-1834, Km 5 Karaj Special Road, Tehran, Iran; Unit (or Suite) 207, Saleh Blvd., Tehran, Iran; Unit 207, Tarajit Maydane Taymori (or Teimori) Square, Basiri Building, Tarasht, Tehran, Iran; Additional Sanctions Information—Subject to Secondary Sanctions [NPWMD] [IFSR] [RUSSIA-EO14024].

Designated pursuant to section 1(a)(iii) of E.O. 13382 on December 12, 2013 for having provided, or attempted to provide, financial, material, technological or other support for, or goods or services in support of, the MINISTRY OF DEFENSE AND ARMED FORCES LOGISTICS.

Designated pursuant to section 1(a)(iv) of E.O. 13382 on December 12, 2013 for being owned or controlled by,

or acting or purporting to act for or on behalf of, directly or indirectly, the ISLAMIC REVOLUTIONARY GUARD CORPS.

Designated pursuant to Section 1(a)(ii)(F) of E.O. 14024 on November 15, 2022 for engaging in activities that undermine the peace, security, political stability, or territorial integrity of the United States, its allies, or its partners.

Dated: January 6, 2022.

**Andrea M. Gacki,**

*Director, Office of Foreign Assets Control,  
U.S. Department of the Treasury.*

[FR Doc. 2023-00376 Filed 1-10-23; 8:45 am]

**BILLING CODE 4810-AL-P**

## DEPARTMENT OF THE TREASURY

### Internal Revenue Service

#### Proposed Collection; Comment Request for Notice 2001-1

**AGENCY:** Internal Revenue Service (IRS), Treasury.

**ACTION:** Notice and request for comments.

**SUMMARY:** The Department of the Treasury, as part of its continuing effort to reduce paperwork and respondent burden, invites the general public and other Federal agencies to take this

opportunity to comment on proposed and/or continuing information collections, as required by the Paperwork Reduction Act of 1995. The IRS is soliciting comments concerning Notice 2001-1, Employer-Designed Tip Reporting Program for the Food and Beverage Industry (EmTRAC).

**DATES:** Written comments should be received on or before March 13, 2023 to be assured of consideration.

**ADDRESSES:** Direct all written comments to Andres Garcia, Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington, DC 20224 or by email to [pra.comments@irs.gov](mailto:pra.comments@irs.gov). Please reference the information collection's "OMB number 1545-1716" in the subject line of the message.

#### FOR FURTHER INFORMATION CONTACT:

Requests for additional information or copies of the notice should be directed to Sara Covington, Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington DC 20224, or through the internet at [sara.l.covington@irs.gov](mailto:sara.l.covington@irs.gov).

#### SUPPLEMENTARY INFORMATION:

*Title:* Employer-Designed Tip Reporting Program for the Food and Beverage Industry (EmTRAC).

*OMB Number:* 1545-1716.

*Notice Number:* Notice 2001-1.

*Abstract:* Information is required by the Internal Revenue Service in its compliance efforts to assist employers in the food and beverage industry that have employee who receive both cash and charged tips; in understanding and complying with Internal Revenue Code section 6053(a), which requires employees to report all their tips monthly to their employers.

*Current Actions:* There are no changes being made to the notice at this time.

*Type of Review:* Extension of a currently approved collection.

*Affected Public:* Business or other for-profit organizations.

*Estimated Number of Respondents and/or Recordkeepers:* 20.

*Estimated Average Time per Respondent/Recordkeeper:* 44 hours.

*Estimated Total Annual Reporting and/or Recordkeeping Burden Hours:* 870 hours.

The following paragraph applies to all of the collections of information covered by this notice:

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the collection of information displays a valid OMB control number. Books or records relating to a collection of information must be retained as long as their contents may become material in the administration of any internal revenue law. Generally, tax returns and tax return information are confidential, as required by 26 U.S.C. 6103.

*Request for Comments:* Comments submitted in response to this notice will be summarized and/or included in the request for OMB approval. All comments will become a matter of public record. Comments are invited on: (a) whether the collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden of the collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology; and (e) estimates of capital or start-up costs and costs of operation, maintenance, and purchase of services to provide information.

Approved: January 05, 2023.

**Sara L. Covington,**  
*IRS Tax Analyst.*

[FR Doc. 2023-00336 Filed 1-10-23; 8:45 am]

**BILLING CODE 4830-01-P**

## DEPARTMENT OF THE TREASURY

### Internal Revenue Service

#### Proposed Collection; Comment Request for Form 14693

**AGENCY:** Internal Revenue Service (IRS), Treasury.

**ACTION:** Notice and request for comments.

**SUMMARY:** The Internal Revenue Service (IRS), as part of its continuing effort to reduce paperwork and respondent burden, invites the general public and other Federal agencies to take this opportunity to comment on information collections, as required by the Paperwork Reduction Act of 1995. The IRS is soliciting comments concerning Application for Reduced Rate of Withholding on Whistleblower Award Payment.

**DATES:** Written comments should be received on or before March 13, 2023 to be assured of consideration.

**ADDRESSES:** Direct all written comments to Andres Garcia, Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington, DC 20224, or by email to [pra.comments@irs.gov](mailto:pra.comments@irs.gov). Include "OMB Number 1545-2273—Application for Reduced Rate of Withholding on Whistleblower Award Payment" in the subject line of the message.

**FOR FURTHER INFORMATION CONTACT:** Requests for additional information or copies of this collection should be directed to Martha R. Brinson, at (202) 317-5753, or at Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington, DC 20224, or through the internet at [Martha.R.Brinson@irs.gov](mailto:Martha.R.Brinson@irs.gov).

#### SUPPLEMENTARY INFORMATION:

*Title:* Application for Reduced Rate of Withholding on Whistleblower Award Payment.

*OMB Number:* 1545-2273.

*Form Number:* 14693.

*Abstract:* The Application for Reduced Rate of Withholding on Whistleblower Award Payment will be used by the whistleblower to apply for a reduction in withholding to minimize the likelihood of the IRS over withholding tax from award payments providing whistleblowers with a pre-award payment opportunity to substantiate their relevant attorney fees and court costs. The Whistleblower Office will review and evaluate the form and calculate the rate.

*Current Actions:* There are no changes in the paperwork burden previously approved by OMB.

*Type of Review:* Extension of a currently approved collection.

*Affected Public:* Individuals or households.

*Estimated Number of Annual Responses:* 100.

*Estimated Time per Response:* 45 mins.

*Estimated Total Annual Burden Hours:* 75.

The following paragraph applies to all of the collections of information covered by this notice:

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the collection of information displays a valid OMB control number. Books or records relating to a collection of information must be retained as long as their contents may become material in the administration of any internal revenue law. Generally, tax returns and tax return information are confidential, as required by 26 U.S.C. 6103.

*Request For Comments:* Comments submitted in response to this notice will be summarized and/or included in the request for OMB approval. Comments will be of public record. Comments are invited on: (a) whether the collection of information is necessary for the proper performance of the functions of the agency, including whether the information has practical utility; (b) the accuracy of the agency's estimate of the burden of the collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; (d) ways to minimize the burden of the collection of information on or other forms of information technology; and (e) estimates of capital or start-up costs and costs of operation, maintenance, and purchase of services to provide information.

Approved: January 5, 2023.

**Martha R. Brinson,**  
*Tax Analyst.*

[FR Doc. 2023-00358 Filed 1-10-23; 8:45 am]

**BILLING CODE 4830-01-P**

## DEPARTMENT OF THE TREASURY

### Internal Revenue Service

#### Proposed Collection; Comment Request for Forms 8857 and 8857(SP)

**AGENCY:** Internal Revenue Service (IRS), Treasury.

**ACTION:** Notice and request for comments.

**SUMMARY:** The Internal Revenue Service (IRS), as part of its continuing effort to reduce paperwork and respondent burden, invites the general public and

other Federal agencies to take this opportunity to comment on information collections, as required by the Paperwork Reduction Act of 1995. The IRS is soliciting comments concerning Request for Innocent Spouse Relief.

**DATES:** Written comments should be received on or before March 13, 2023 to be assured of consideration.

**ADDRESSES:** Direct all written comments to Andres Garcia, Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington, DC 20224, or by email to [pra.comments@irs.gov](mailto:pra.comments@irs.gov). Include "OMB Number 1545-1596—Request for Innocent Spouse Relief" in the subject line of the message.

**FOR FURTHER INFORMATION CONTACT:** Requests for additional information or copies of this collection should be directed to Martha R. Brinson, at (202) 317-5753, or at Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington, DC 20224, or through the internet at [Martha.R.Brinson@irs.gov](mailto:Martha.R.Brinson@irs.gov).

**SUPPLEMENTARY INFORMATION:**

*Title:* Request for Innocent Spouse Relief.

*OMB Number:* 1545-1596.

*Form Numbers:* 8857 and 8857(SP).

*Abstract:* Section 6013(e) of the Internal Revenue Code allows taxpayers to request, and IRS to grant, "innocent spouse" relief when: the taxpayer files a joint return with tax substantially understated; the taxpayer establishes no knowledge of, or benefit from, the understatement; and it would be inequitable to hold the taxpayer liable. Forms 8857 and 8857(SP) is used to request relief from liability of an understatement of tax on a joint return resulting from a grossly erroneous item attributable to the spouse.

*Current Actions:* There are no changes in the paperwork burden previously approved by OMB.

*Type of Review:* Extension of a currently approved collection.

*Affected Public:* Individuals or households.

*Estimated Number of Respondents:* 50,000.

*Estimated Time per Respondent:* 6 hours, 32 minutes.

*Estimated Total Annual Burden Hours:* 316,000.

The following paragraph applies to all of the collections of information covered by this notice:

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the collection of information displays a valid OMB control number. Books or records relating to a collection of information must be retained as long

as their contents may become material in the administration of any internal revenue law. Generally, tax returns and tax return information are confidential, as required by 26 U.S.C. 6103.

*Request for Comments:* Comments submitted in response to this notice will be summarized and/or included in the request for OMB approval. Comments will be of public record. Comments are invited on: (a) whether the collection of information is necessary for the proper performance of the functions of the agency, including whether the information has practical utility; (b) the accuracy of the agency's estimate of the burden of the collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; (d) ways to minimize the burden of the collection of information on or other forms of information technology; and (e) estimates of capital or start-up costs and costs of operation, maintenance, and purchase of services to provide information.

Approved: January 5, 2023.

**Martha R. Brinson,**

*Tax Analyst.*

[FR Doc. 2023-00357 Filed 1-10-23; 8:45 am]

**BILLING CODE 4830-01-P**

## DEPARTMENT OF THE TREASURY

### Internal Revenue Service

#### Proposed Collection; Comment Request for Form 6478

**AGENCY:** Internal Revenue Service (IRS), Treasury.

**ACTION:** Notice and request for comments.

**SUMMARY:** The Internal Revenue Service (IRS), as part of its continuing effort to reduce paperwork and respondent burden, invites the general public and other Federal agencies to take this opportunity to comment on information collections, as required by the Paperwork Reduction Act of 1995. The IRS is soliciting comments concerning Biofuel Producer Credit.

**DATES:** Written comments should be received on or before March 13, 2023 to be assured of consideration.

**ADDRESSES:** Direct all written comments to Andres Garcia, Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington, DC 20224, or by email to [pra.comments@irs.gov](mailto:pra.comments@irs.gov). Include "OMB Number 1545-0231—Biofuel Producer Credit" in the subject line of the message.

**FOR FURTHER INFORMATION CONTACT:** Requests for additional information or

copies of this collection should be directed to Martha R. Brinson, at (202) 317-5753, or at Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington, DC 20224, or through the internet at [Martha.R.Brinson@irs.gov](mailto:Martha.R.Brinson@irs.gov).

**SUPPLEMENTARY INFORMATION:**

*Title:* Biofuel Producer Credit.

*OMB Number:* 1545-0231.

*Form Number:* 6478.

*Abstract:* Form 6478 is used to figure your section 40 biofuel producer credit. You claim the credit for the tax year in which the sale or use occurs. This credit consists of the second generation biofuel producer credit.

*Current Actions:* There are no changes in the paperwork burden previously approved by OMB.

*Type of Review:* Extension of a currently approved collection.

*Affected Public:* Business or other for-profit organizations.

*Estimated Number of Respondents:* 3,300.

*Estimated Time per Respondent:* 4 hours, 36 mins.

*Estimated Total Annual Burden Hours:* 13,233.

The following paragraph applies to all of the collections of information covered by this notice:

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the collection of information displays a valid OMB control number. Books or records relating to a collection of information must be retained as long as their contents may become material in the administration of any internal revenue law. Generally, tax returns and tax return information are confidential, as required by 26 U.S.C. 6103.

*Request for Comments:* Comments submitted in response to this notice will be summarized and/or included in the request for OMB approval. Comments will be of public record. Comments are invited on: (a) whether the collection of information is necessary for the proper performance of the functions of the agency, including whether the information has practical utility; (b) the accuracy of the agency's estimate of the burden of the collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; (d) ways to minimize the burden of the collection of information on or other forms of information technology; and (e) estimates of capital or start-up costs and costs of operation, maintenance, and purchase of services to provide information.

Approved: January 5, 2023.

**Martha R. Brinson,**  
Tax Analyst.

[FR Doc. 2023-00359 Filed 1-10-23; 8:45 am]

BILLING CODE 4830-01-P

## DEPARTMENT OF THE TREASURY

### Internal Revenue Service

#### Proposed Collection; Comment Request for Regulation Project

**AGENCY:** Internal Revenue Service (IRS), Treasury.

**ACTION:** Notice and request for comments.

**SUMMARY:** The Internal Revenue Service, as part of its continuing effort to reduce paperwork and respondent burden, invites the general public and other Federal agencies to take this opportunity to comment on information collections, as required by the Paperwork Reduction Act of 1995. The IRS is soliciting comments concerning estate and gift taxes; qualified disclaimers of property (section 2518).

**DATES:** Written comments should be received on or before March 13, 2023 to be assured of consideration.

**ADDRESSES:** Direct all written comments to Andres Garcia, Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington, DC 20224 or by email to [pra.comments@irs.gov](mailto:pra.comments@irs.gov). Please reference the information collection's "OMB number 1545-0959" in the subject line of the message.

**FOR FURTHER INFORMATION CONTACT:** Requests for additional information or copies of the regulations should be directed to Sara Covington, at (202) 317-5744, or Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington, DC 20224, or through the internet, at [Sara.L.Covington@irs.gov](mailto:Sara.L.Covington@irs.gov).

#### SUPPLEMENTARY INFORMATION:

*Title:* Estate and Gift Taxes; Qualified Disclaimers of Property.

*OMB Number:* 1545-0959.

*Regulation Project Number:* TD 8095.  
*Abstract:* Internal Revenue Code section 2518 allows a person to disclaim an interest in property received by gift or inheritance. The interest is treated as if the disclaimant never received or transferred such interest for Federal gift tax purposes. A qualified disclaimer must be in writing and delivered to the transferor or trustee.

*Current Actions:* There is no change to this existing regulation.

*Type of Review:* Extension without change of a currently approved collection.

*Affected Public:* Individuals or households.

*Estimated Number of Respondents:* 2,000.

*Estimated Time per Respondent:* 30 minutes.

*Estimated Total Annual Burden Hours:* 1,000.

The following paragraph applies to all of the collections of information covered by this notice:

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the collection of information displays a valid OMB control number. Books or records relating to a collection of information must be retained as long as their contents may become material in the administration of any internal revenue law. Generally, tax returns and tax return information are confidential, as required by 26 U.S.C. 6103.

*Request for Comments:* Comments submitted in response to this notice will be summarized and/or included in the request for OMB approval. All comments will become a matter of public record.

*Comments are invited on:* (a) Whether the collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden of the collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology; and (e) estimates of capital or start-up costs and costs of operation, maintenance, and purchase of services to provide information.

Approved: January 05, 2023.

**Sara L. Covington,**  
IRS Tax Analyst.

[FR Doc. 2023-00329 Filed 1-10-23; 8:45 am]

BILLING CODE 4830-01-P

## DEPARTMENT OF THE TREASURY

### Internal Revenue Service

#### Proposed Collection; Comment Request for Regulation Project

**AGENCY:** Internal Revenue Service (IRS), Treasury.

**ACTION:** Notice and request for comments.

**SUMMARY:** The Internal Revenue Service, as part of its continuing effort to reduce

paperwork and respondent burden, invites the general public and other Federal agencies to take this opportunity to comment on continuing information collections, as required by the Paperwork Reduction Act of 1995. The IRS is soliciting comments concerning regulations governing practice before the Internal Revenue Service.

**DATES:** Written comments should be received on or before March 13, 2023 to be assured of consideration.

**ADDRESSES:** Direct all written comments to Andres Garcia, Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington, DC 20224, or by email to [pra.comments@irs.gov](mailto:pra.comments@irs.gov). Include 1545-1726 or T.D. 9011, Regulations Governing Practice Before the Internal Revenue Service.

**FOR FURTHER INFORMATION CONTACT:** Requests for additional information or copies of this collection should be directed to LaNita Van Dyke, at (202) 317-6009, at Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington, DC 20224, or through the internet at [Lanita.VanDyke@irs.gov](mailto:Lanita.VanDyke@irs.gov).

#### SUPPLEMENTARY INFORMATION:

*Title:* Regulations Governing Practice Before the Internal Revenue Service.

*OMB Number:* 1545-1726.

*Regulation Project and Associated Form Numbers:* T.D. 9527, T.D. 9011, Rev. Proc. 2012-12, Form 14360, Form 14364, and Form 14392.

*Abstract:* The regulations affect individuals who are eligible to practice before the Internal Revenue Service and authorize the Director of Practice to act upon applications for enrollment to practice before the Internal Revenue Service. The Director of Practice will use certain information to ensure that: (1) enrolled agents properly complete continuing education requirements to obtain renewal; (2) practitioners properly obtain consent of taxpayers before representing conflicting interests; (3) practitioners do not use e-commerce to make misleading solicitations.

*Current Actions:* There are no changes being made to the regulation, forms, or burden estimates at this time.

*Type of Review:* Extension of a currently approved collection.

*Affected Public:* Businesses or other for-profit organizations.

*Estimated Number of Respondents:* 718,400.

*Estimated Time per Respondent:* 2 hours, 28 minutes.

*Estimated Total Annual Burden Hours:* 1,777,125 hours.

The following paragraph applies to all of the collections of information covered by this notice.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the collection of information displays a valid OMB control number. Books or records relating to a collection of information must be retained as long as their contents may become material in the administration of any internal revenue law. Generally, tax returns and tax return information are confidential, as required by 26 U.S.C. 6103.

*Request for Comments:* Comments submitted in response to this notice will be summarized and/or included in the request for OMB approval. All comments will become a matter of public record. Comments are invited on: (a) whether the collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden of the collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology; and (e) estimates of capital or start-up costs and costs of operation, maintenance, and purchase of services to provide information.

Approved: January 4, 2023.

**Molly J. Stasko,**

*Senior Tax Analyst.*

[FR Doc. 2023-00250 Filed 1-10-23; 8:45 am]

**BILLING CODE 4830-01-P**

## DEPARTMENT OF THE TREASURY

### Internal Revenue Service

#### Proposed Collection; Requesting Comments on Form 8498

**AGENCY:** Internal Revenue Service (IRS), Treasury.

**ACTION:** Notice and request for comments.

**SUMMARY:** The Internal Revenue Service, as part of its continuing effort to reduce paperwork and respondent burden, invites the general public and other federal agencies to take this opportunity to comment on proposed and/or continuing information collections, as required by the Paperwork Reduction Act of 1995. The IRS is soliciting comments concerning Form 8498, Continuing Education Provider Application and Request for Provider Number.

**DATES:** Written comments should be received on or before March 13, 2023 to be assured of consideration.

**ADDRESSES:** Direct all written comments to Andres Garcia, Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington, DC 20224, or by email to [pra.comments@irs.gov](mailto:pra.comments@irs.gov). Include OMB Control No. 1545-1459 in the subject line of the message.

**FOR FURTHER INFORMATION CONTACT:** Requests for additional information or copies of this collection should be directed to Jon Callahan, (737) 800-7639, at Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington, DC 20224, or through the internet at [jon.r.callahan@irs.gov](mailto:jon.r.callahan@irs.gov).

**SUPPLEMENTARY INFORMATION:** The IRS is currently seeking comments concerning the following information collection tools, reporting, and record-keeping requirements:

*Title:* Continuing Education Provider Application and Request for Provider Number.

*OMB Number:* 1545-1459.

*Form Number:* Form 8498.

*Abstract:* Form 8498 is used to: (1) register as a new provider of continuing educational programs being offered to IRS enrolled agents, enrolled retirement plan agents, and other tax return preparers; (2) annually renew the status as an IRS-approved continuing educational provider; and (3) add new programs to an existing IRS-approved provider continuing education curriculum.

*Current Actions:* There is no change to the existing collection.

*Type of Review:* Extension of a currently approved collection.

*Affected Public:* Business or other for-profit organizations.

*Estimated Number of Responses:* 800.

*Estimated Time per Respondent:* 36 minutes.

*Estimated Total Annual Burden*

*Hours:* 480.

The following paragraph applies to all of the collections of information covered by this notice:

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the collection of information displays a valid OMB control number. Books or records relating to a collection of information must be retained as long as their contents may become material in the administration of any internal revenue law. Generally, tax returns and tax return information are confidential, as required by 26 U.S.C. 6103.

*Request for Comments:* Comments submitted in response to this notice will be summarized and/or included in the

request for OMB approval. All comments will become a matter of public record. Comments are invited on: (a) Whether the collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden of the collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology; and (e) estimates of capital or start-up costs and costs of operation, maintenance, and purchase of services to provide information.

Approved: January 5, 2023.

**Jon R. Callahan,**

*Tax Analyst.*

[FR Doc. 2023-00338 Filed 1-10-23; 8:45 am]

**BILLING CODE 4830-01-P**

## DEPARTMENT OF THE TREASURY

### Internal Revenue Service

#### Proposed Collection; Requesting Comments on Special Rules for Long-Term Contracts Under Section 460

**AGENCY:** Internal Revenue Service (IRS), Treasury.

**ACTION:** Notice and request for comments.

**SUMMARY:** The Internal Revenue Service, as part of its continuing effort to reduce paperwork and respondent burden, invites the general public and other federal agencies to take this opportunity to comment on proposed and/or continuing information collections, as required by the Paperwork Reduction Act of 1995. The IRS is soliciting comments concerning Form 8697, Interest Computation Under the Look-Back Method for Completed Long-Term Contracts, and final regulations in Treasury Decisions (TD) 8775, 8929, 8995, and 9137 relating to special rules for long-term contracts under Internal Revenue Code (IRC) section 460.

**DATES:** Written comments should be received on or before March 13, 2023 to be assured of consideration.

**ADDRESSES:** Direct all written comments to Andres Garcia, Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington, DC 20224, or by email to [pra.comments@irs.gov](mailto:pra.comments@irs.gov). Include OMB Control No. 1545-1732 in the subject line of the message.



**FOR FURTHER INFORMATION CONTACT:**

Requests for additional information or copies of this collection should be directed to Jon Callahan, (737) 800-7639, at Internal Revenue Service, Room 6526, 1111 Constitution Avenue NW, Washington, DC 20224, or through the internet at [jon.r.callahan@irs.gov](mailto:jon.r.callahan@irs.gov).

**SUPPLEMENTARY INFORMATION:** The IRS is currently seeking comments concerning the following information collection tools, reporting, and record-keeping requirements:

*Title:* Special Rules for Long-Term Contracts Under Section 470.

*OMB Number:* 1545-1732.

*Form Number:* 8697.

*Regulation Project Number:* 8775, 8929, 8995, and 9137.

*Abstract:* IRC section 460 generally provides rules that requires taxpayers to determine taxable income from a long-term contract using the percentage-of-completion (PCM) method and pay, or be entitled to receive, interest computed using the look-back method.

Form 8697 is used by taxpayers to figure the interest due or to be refunded under the look-back method of IRC section 460(b)(2) on certain long-term contracts that are accounted for under either the PCM method or the percentage-of-completion capitalized cost method.

TD 8775 added Treasury Regulations section 1.460-6(j), providing taxpayers with the requirements to make an election not to apply the look-back method to long-term contracts in de minimis cases.

TD 8929 added Treasury Regulations section 1.460-1(e)(4), requiring taxpayers to attach a statement with specific information to their income tax return if they sever an agreement or aggregate two or more agreements during the taxable year.

TD 8995, as amended by TD 9137, added Treasury Regulations section 1.460-6(g)(3)(ii)(D) providing rules concerning a mid-contract change in taxpayer of a contract accounted for under a long-term contract method of accounting. The regulation requires the previous taxpayer to provide specific information to the new taxpayer to help the new taxpayer apply the look-back method when the income from a long-term contract has been previously reported by another taxpayer.

*Current Actions:* There is no change to the existing collection. However, the estimated burden for individuals filing Form 8697 is approved under OMB control number 1545-0074. The estimated burden for businesses filing Form 8697 is approved under OMB control number 1545-0123.

*Type of Review:* Extension of a currently approved collection.

*Affected Public:* Individuals and households, and business or other for-profit organizations.

*Estimated Number of Responses:* 75,010.

*Estimated Time per Respondent:* 22 minutes.

*Estimated Total Annual Burden Hours:* 26,668.

The following paragraph applies to all of the collections of information covered by this notice:

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the collection of information displays a valid OMB control number. Books or records relating to a collection of information must be retained as long as their contents may become material in the administration of any internal revenue law. Generally, tax returns and tax return information are confidential, as required by 26 U.S.C. 6103.

*Request for Comments:* Comments submitted in response to this notice will be summarized and/or included in the request for OMB approval. All comments will become a matter of public record. Comments are invited on: (a) Whether the collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden of the collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology; and (e) estimates of capital or start-up costs and costs of operation, maintenance, and purchase of services to provide information.

Approved: January 5, 2023.

**Jon R. Callahan,**

*Tax Analyst.*

[FR Doc. 2023-00337 Filed 1-10-23; 8:45 am]

**BILLING CODE 4830-01-P**

## **U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION**

### **Notice of Open Public Hearing**

**AGENCY:** U.S.-China Economic and Security Review Commission.

**ACTION:** Notice of open public hearing.

**SUMMARY:** Notice is hereby given of the following hearing of the U.S.-China

Economic and Security Review Commission. The Commission is mandated by Congress to investigate, assess, and report to Congress annually on "the national security implications of the economic relationship between the United States and the People's Republic of China." Pursuant to this mandate, the Commission will hold a public hearing in Washington, DC on January 26, 2023 on "China's Military Diplomacy and Overseas Security Activities."

**DATES:** The hearing is scheduled for Thursday, January 26, 2023 at 9:30 a.m.

**ADDRESSES:** Members of the public will be able to view a live webcast via the Commission's website at [www.uscc.gov](http://www.uscc.gov). *Reservations are not required to view the hearing. If available, instructions for in-person attendance will be posted on the Commission's website, based on the status of public access to Capitol grounds.*

**FOR FURTHER INFORMATION CONTACT:** Any member of the public seeking further information concerning the hearing should contact Jameson Cunningham, 444 North Capitol Street NW, Suite 602, Washington, DC 20001; telephone: 202-624-1496, or via email at [jcunningham@uscc.gov](mailto:jcunningham@uscc.gov). *Reservations are not required to attend the hearing.*

*ADA Accessibility:* For questions about the accessibility of the event or to request an accommodation, please contact Jameson Cunningham via email at [jcunningham@uscc.gov](mailto:jcunningham@uscc.gov). Requests for an accommodation should be made as soon as possible, and at least five business days prior to the event.

### **SUPPLEMENTARY INFORMATION:**

*Background:* This is the first public hearing the Commission will hold during its 2023 report cycle. The hearing will start with a review of the concepts and strategy of China's military diplomacy. Next, the hearing will evaluate how China uses overseas military activities to improve capabilities and access for the People's Liberation Army. Finally, the hearing will examine China's foreign military sales and acquisition of foreign military technology.

The hearing will be co-chaired by Chairman Carolyn Bartholomew and Commissioner Randall Schriver. Any interested party may file a written statement by January 26, 2023 by transmitting to the contact above. A portion of the hearing will include a question and answer period between the Commissioners and the witnesses.

*Authority:* Congress created the U.S.-China Economic and Security Review Commission in 2000 in the National Defense Authorization Act (Pub. L. 106-398), as amended by Division P of the

Consolidated Appropriations Resolution, 2003 (Pub. L. 108–7), as amended by Public Law 109–108 (November 22, 2005), as amended by Public Law 113–291 (December 19, 2014).

Dated: January 6, 2023.

**Daniel W. Peck,**

*Executive Director, U.S.-China Economic and Security Review Commission.*

[FR Doc. 2023–00403 Filed 1–10–23; 8:45 am]

BILLING CODE 1137–00–P

## UNIFIED CARRIER REGISTRATION PLAN

### Sunshine Act Meetings

**TIME AND DATE:** January 17, 2023, 12 p.m. to 3 p.m., Eastern time.

**PLACE:** This meeting will be accessible via conference call and via Zoom Meeting and Screenshare. Any interested person may call (i) 1–929–205–6099 (US Toll) or 1–669–900–6833 (US Toll) or (ii) 1–877–853–5247 (US Toll Free) or 1–888–788–0099 (US Toll Free), Meeting ID: 920 2865 6573, to listen and participate in this meeting. The website to participate via Zoom Meeting and Screenshare is <https://kellen.zoom.us/meeting/register/tjYtdeGuqz0vHdeEnHMgdIv0ymE97WjXWHG2>.

**STATUS:** This meeting will be open to the public.

**MATTERS TO BE CONSIDERED:** The Unified Carrier Registration Plan Industry Advisory Subcommittee (the “Subcommittee”) will conduct a meeting to continue its work in developing and implementing the Unified Carrier Registration Plan and Agreement. The subject matter of this meeting will include:

#### Agenda

##### I. Call to Order—UCR Industry Advisory Subcommittee Chair

The Industry Advisory Subcommittee Chair will welcome attendees, call the

meeting to order, call roll for the Industry Advisory Subcommittee, confirm whether a quorum is present, and facilitate self-introductions.

##### II. Verification of Publication of Meeting Notice—UCR Executive Director

The UCR Executive Director will verify the publication of the meeting notice on the UCR website and distribution to the UCR contact list via email followed by the subsequent publication of the notice in the **Federal Register**.

##### III. Review and Approval of Subcommittee Agenda—UCR Industry Advisory Subcommittee Chair

*For Discussion and Possible Subcommittee Action*

The proposed Agenda will be reviewed, and the Subcommittee will consider adoption.

##### Ground Rules

> Subcommittee action only to be taken in designated areas on agenda.

##### IV. Review and Approval of Minutes From the August 8, 2022 Meeting—UCR Industry Advisory Subcommittee Chair

*For Discussion and Possible Subcommittee Action*

Draft minutes from the August 8, 2022 Industry Advisory Subcommittee meeting via teleconference will be reviewed. The UCR Industry Advisory Subcommittee will consider action to approve.

##### V. Review of the Full UCR Board Agenda—UCR Industry Advisory Subcommittee Chair

*For Discussion and Possible Subcommittee Action*

The UCR Industry Advisory Subcommittee Chair will discuss the full UCR Board agenda with the Subcommittee. The Subcommittee may take action to recommend or oppose to

the UCR Board any action item listed on the Board agenda.

##### VI. 2023 Priorities for the Subcommittee—UCR Industry Advisory Subcommittee Chair

The UCR Industry Advisory Subcommittee Chair will lead a discussion on the 2023 calendar year priorities for the Subcommittee.

##### VII. Truck Parking Initiative—UCR Industry Advisory Subcommittee Chair

The UCR Industry Advisory Subcommittee Chair will discuss the truck parking initiative with Subcommittee members.

##### VIII. Other Items—UCR Industry Advisory Subcommittee Chair

The UCR Industry Advisory Subcommittee Chair will call for any other items Subcommittee members would like to discuss.

##### IX. Adjournment—UCR Industry Advisory Subcommittee Chair

The UCR Industry Advisory Subcommittee Chair will adjourn the meeting.

The agenda will be available no later than 5:00 p.m. Eastern time, January 9, 2023 at: <https://plan.ucr.gov>.

##### CONTACT PERSON FOR MORE INFORMATION:

Elizabeth Leaman, Chair, Unified Carrier Registration Plan Board of Directors, (617) 305–3783, [eleaman@board.ucr.gov](mailto:eleaman@board.ucr.gov).

**Alex B. Leath,**

*Chief Legal Officer, Unified Carrier Registration Plan.*

[FR Doc. 2023–00498 Filed 1–9–23; 4:15 pm]

BILLING CODE 4910–YL–P



# FEDERAL REGISTER

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Part II

Department of Energy

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10 CFR Part 430

Energy Conservation Program: Energy Conservation Standards for General Service Lamps; Proposed Rule

**DEPARTMENT OF ENERGY****10 CFR Part 430****[EERE-2022-BT-STD-0022]****RIN 1904-AF43****Energy Conservation Program: Energy Conservation Standards for General Service Lamps**

**AGENCY:** Office of Energy Efficiency and Renewable Energy, Department of Energy.

**ACTION:** Notice of proposed rulemaking and announcement of public meeting.

**SUMMARY:** The Energy Policy and Conservation Act, as amended (EPCA), directs the U.S. Department of Energy (DOE) to initiate two rulemaking cycles for general service lamps (GSLs) that, among other requirements, determine whether standards in effect for GSLs should be amended. EPCA also requires DOE to periodically determine whether more-stringent, standards would be technologically feasible and economically justified, and would result in significant energy savings. In this notice of proposed rulemaking (NOPR), DOE proposes amended standards for GSLs pursuant to its statutory authority in EPCA, and also announces a webinar to receive comments on its proposal and associated analyses and results.

**DATES:**

*Comments:* DOE will accept comments, data, and information regarding this NOPR no later than March 27, 2023.

Comments regarding the likely competitive impact of the proposed standard should be sent to the Department of Justice contact listed in the **ADDRESSES** section on or before February 10, 2023.

*Meeting:* DOE will hold a public meeting via webinar on Wednesday, February 1, 2023, from 1 p.m. to 4 p.m. See section IX, “Public Participation,” for webinar registration information, participant instructions, and information about the capabilities available to webinar participants.

**ADDRESSES:** Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at [www.regulations.gov](http://www.regulations.gov), under docket number EERE-2022-BT-STD-0022. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE-2022-BT-STD-0022, by any of the following methods:

*Email:* [GSL2022STD0022@ee.doe.gov](mailto:GSL2022STD0022@ee.doe.gov). Include the docket number EERE-2022-

BT-STD-0022 in the subject line of the message.

*Postal Mail:* Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, Mailstop EE-5B, 1000 Independence Avenue SW, Washington, DC 20585-0121. Telephone: (202) 287-1445. If possible, please submit all items on a compact disc (CD), in which case it is not necessary to include printed copies.

*Hand Delivery/Courier:* Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, 950 L’Enfant Plaza SW, 6th Floor, Washington, DC 20024. Telephone: (202) 287-1445. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

No telefacsimiles (faxes) will be accepted. For detailed instructions on submitting comments and additional information on the rulemaking process, see section IX of this document.

*Docket:* The docket for this activity, which includes **Federal Register** notices, comments, and other supporting documents/materials, is available for review at [www.regulations.gov](http://www.regulations.gov). All documents in the docket are listed in the [www.regulations.gov](http://www.regulations.gov) index. However, not all documents listed in the index may be publicly available, such as information that is exempt from public disclosure.

The docket web page can be found at [www.regulations.gov/docket/EERE-2022-BT-STD-0022](http://www.regulations.gov/docket/EERE-2022-BT-STD-0022). The docket web page contains instructions on how to access all documents, including public comments, in the docket. See section IX of this document for information on how to submit comments through [www.regulations.gov](http://www.regulations.gov).

EPCA requires the Attorney General to provide DOE a written determination of whether the proposed standard is likely to lessen competition. The U.S. Department of Justice Antitrust Division invites input from market participants and other interested persons with views on the likely competitive impact of the proposed standard. Interested persons may contact the Division at [energy.standards@usdoj.gov](mailto:energy.standards@usdoj.gov) on or before the date specified in the **DATES** section. Please indicate in the “Subject” line of your email the title and Docket Number of this proposed rule.

**FOR FURTHER INFORMATION CONTACT:**

Mr. Bryan Berringer, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, EE-5B, 1000 Independence Avenue SW, Washington,

DC 20585-0121. Telephone: (202) 586-0371. Email: [ApplianceStandardsQuestions@ee.doe.gov](mailto:ApplianceStandardsQuestions@ee.doe.gov).

Ms. Celia Sher, U.S. Department of Energy, Office of the General Counsel, GC-33, 1000 Independence Avenue SW, Washington, DC 20585-0121. Telephone: (202) 287-6122. Email: [Celia.Sher@hq.doe.gov](mailto:Celia.Sher@hq.doe.gov).

For further information on how to submit a comment, review other public comments and the docket, or participate in the public meeting, contact the Appliance and Equipment Standards Program staff at (202) 287-1445 or by email: [ApplianceStandardsQuestions@ee.doe.gov](mailto:ApplianceStandardsQuestions@ee.doe.gov).

**SUPPLEMENTARY INFORMATION:** DOE proposes to incorporate by reference the following industry test standard into 10 CFR part 430:

Underwriters Laboratories (UL) 1598C, “UL 1598C Standard for Safety Light-Emitting Diode (LED) Retrofit Luminaire Conversion Kits,” approved January 12, 2017.

Copies of UL 1598C can be obtained by going to <https://www.shopulstandards.com/Default.aspx>.

For a further discussion of this standard, see section VIII.M of this document.

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- Title III, Part B <sup>1</sup> of the EPCA,<sup>2</sup> established the Energy Conservation Program for Consumer Products Other Than Automobiles. (42 U.S.C. 6291–6309) These products include GSLs, the subject of this proposed rulemaking.
- DOE is issuing this NOPR pursuant to multiple provisions in EPCA. First, EPCA requires that DOE must initiate a second rulemaking cycle by January 1, 2020, to determine whether standards in effect for general service incandescent lamps (GSLs) should be amended with more stringent energy conservation standards and if the exemptions for certain incandescent lamps should be maintained or discontinued. For this second review of energy conservation standards, the scope of rulemaking is not limited to incandescent technologies. (42 U.S.C. 6295(i)(6)(B)(ii))
- <sup>1</sup> For editorial reasons, upon codification in the U.S. Code, part B was redesignated part A. All references to part B in this document refer to the redesignated part A.
- <sup>2</sup> All references to EPCA in this document refer to the statute as amended through the Energy Act of 2020, Public Law 116–260 (Dec. 27, 2020), which reflect the last statutory amendments that impact parts A and A–1 of EPCA.

Second, EPCA also provides that not later than 6 years after issuance of any final rule establishing or amending a standard, DOE must publish either a notice of determination that standards for the product do not need to be amended, or a notice of proposed rulemaking including new proposed energy conservation standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6295(m)) Third, pursuant to EPCA, any new or amended energy conservation standard must be designed to achieve the maximum improvement in energy efficiency that DOE determines is technologically feasible and economically justified. (42

U.S.C. 6295(o)(2)(A)) Furthermore, the new or amended standard must result in a significant conservation of energy. (42 U.S.C. 6295(o)(3)(B)) Lastly, when DOE proposes to adopt an amended standard for a type or class of covered product, it must determine the maximum improvement in energy efficiency or maximum reduction in energy use that is technologically feasible for such product. (42 U.S.C. 6295(p)(1))

In accordance with these and other statutory provisions discussed in this document, DOE proposes energy conservation standards for GSLs. This is the second rulemaking cycle for GSLs. As a result of the first rulemaking cycle, there is currently a sales prohibition on

the sale of any GSLs that do not meet a minimum efficacy standard of 45 lumens per watt. There are existing DOE energy conservation standards higher than 45 lumens per watt for medium base compact fluorescent lamps (MBCFLs), which are types of GSLs. 70 FR 60407 (Oct. 18, 2005). The standards proposed in this rulemaking, which are expressed in minimum lumens (lm) output per watt (W) of a lamp or lamp efficacy (lm/W), are shown in Table I.1. These proposed standards, if adopted, would apply to all GSLs listed in Table I.1 manufactured in, or imported into, the United States beginning on the effective date for the standard.

**Table I.1 Proposed Energy Conservation Standards for GSLs**

Product Class	Efficacy Equation (lm/W)
Integrated Omnidirectional Short GSLs, No Standby Power	$\text{Efficacy} = \frac{123}{1.2 + e^{-0.005(\text{Lumens}-200)}} + A$
Integrated Omnidirectional Short GSLs, With Standby Power	$\text{Efficacy} = \frac{123}{1.2 + e^{-0.005(\text{Lumens}-200)}} + A$
Integrated Directional GSLs, No Standby Power	$\text{Efficacy} = \frac{73}{0.5 + e^{-0.0021(\text{Lumens}+1000)}} - A$
Integrated Directional GSLs, With Standby Power	$\text{Efficacy} = \frac{73}{0.5 + e^{-0.0021(\text{Lumens}+1000)}} - A$
Integrated Omnidirectional Long GSLs	$\text{Efficacy} = \frac{123}{1.2 + e^{-0.005(\text{Lumens}-200)}} + A$
Non-integrated Omnidirectional Long GSLs	$\text{Efficacy} = \frac{123}{1.2 + e^{-0.005(\text{Lumens}-200)}} + A$
Non-integrated Omnidirectional Short GSLs	$\text{Efficacy} = \frac{122}{0.55 + e^{-0.003(\text{Lumens}+250)}} - A$
Non-integrated Directional GSLs	$\text{Efficacy} = \frac{67}{0.45 + e^{-0.00176(\text{Lumens}+1310)}} - A$

\* Initial lumen output as determined in accordance with the DOE test procedure at 10 CFR part 430, subpart B, appendix W or appendix BB and applicable sampling plans.

*A. Impact on Manufacturers*

The industry net present value (INPV) is the sum of the discounted cash flows to the industry from the base year through the end of the analysis period (2022–2058). Using a real discount rate of 6.1 percent, DOE estimates that the INPV for manufacturers of GSLs in the case without new and amended standards is \$2,014 million in 2021\$. Under the proposed new and amended standards, the change in INPV is estimated to range from –13.5 percent to –7.2 percent, which is

approximately –\$271 million to –\$145 million. In order to bring products into compliance with new and amended standards, it is estimated that the industry would incur total conversion costs of \$407 million.

DOE’s analysis of the impacts of the proposed standards on manufacturers is described in section VI.J of this document. The analytic results of the manufacturer impact analysis (MIA) are presented in section VII.B.2 of this document.

*B. Benefits and Costs to Consumers*

Table I.2 presents DOE’s evaluation of the economic impacts of the proposed standards on consumers of GSLs, as measured by the average life-cycle cost (LCC) savings and the simple payback period (PBP).<sup>3</sup> The average LCC savings

<sup>3</sup> The average LCC savings refer to consumers that are affected by a standard and are measured relative to the efficiency distribution in the no-new-standards case, which depicts the market in the first full year of compliance in the absence of new or amended standards (see section VI.F.11 of this document). The simple PBP, which is designed to

are positive for all product classes, and the PBP is less than the average lifetime of GSLs, which varies by product class and efficiency level (see section VI.F.5 of this document).

TABLE I.2—IMPACTS OF PROPOSED ENERGY CONSERVATION STANDARDS ON CONSUMERS OF GSLs

Product class	Average LCC savings (2021\$)	Simple payback period (years)
<b>Residential:</b>		
Integrated Omnidirectional Short .....	0.59	0.8
Integrated Omnidirectional Long .....	1.82	5.4
Integrated Directional .....	3.01	0.0
Non-integrated Omnidirectional * .....	.....	.....
Non-integrated Directional .....	0.28	4.2
<b>Commercial:</b>		
Integrated Omnidirectional Short .....	1.11	0.5
Integrated Omnidirectional Long .....	4.74	2.9
Integrated Directional .....	3.86	0.0
Non-integrated Omnidirectional .....	6.62	2.1
Non-integrated Directional .....	0.69	2.8

\* Non-integrated Omnidirectional GSLs were only analyzed for the commercial sector.

DOE’s analysis of the impacts of the proposed standards on consumers is described in section VII.B.1 of this document.

C. National Benefits and Costs<sup>4</sup>

DOE’s analyses indicate that the proposed energy conservation standards for GSLs would save a significant amount of energy. Relative to the case without new or amended standards, the lifetime energy savings for GSLs purchased in the 30-year period that begins in the anticipated first full year of compliance with the amended standards (2029–2058) amount to 4.0 quadrillion British thermal units (Btu), or quads.<sup>5</sup> This represents a savings of 48 percent relative to the energy use of these products in the case without amended standards (referred to as the “no-new-standards case”).

The cumulative net present value (NPV) of total consumer benefits of the proposed standards for GSLs ranges from \$7.29 billion (at a 7-percent discount rate) to \$20.37 billion (at a 3-

percent discount rate). This NPV expresses the estimated total value of future operating-cost savings minus the estimated increased product costs for GSLs purchased in 2029–2058.

In addition, the proposed standards for GSLs are projected to yield significant environmental benefits. DOE estimates that the proposed standards would result in cumulative emission reductions (over the same period as for energy savings) of 130.63 million metric tons (Mt)<sup>6</sup> of carbon dioxide (CO<sub>2</sub>), 59.27 thousand tons of sulfur dioxide (SO<sub>2</sub>), 203.05 thousand tons of nitrogen oxides (NO<sub>x</sub>), 902.76 thousand tons of methane (CH<sub>4</sub>), 1.36 thousand tons of nitrous oxide (N<sub>2</sub>O), and 0.39 tons of mercury (Hg).<sup>7</sup>

DOE estimates the value of climate benefits from a reduction in greenhouse gases (GHG) using four different estimates of the social cost of CO<sub>2</sub> (SC–CO<sub>2</sub>), the social cost of methane (SC–CH<sub>4</sub>), and the social cost of nitrous oxide (SC–N<sub>2</sub>O). Together these represent the social cost of GHG (SC–

GHG). DOE used interim SC–GHG values developed by an Interagency Working Group on the Social Cost of Greenhouse Gases (IWG).<sup>8</sup> The derivation of these values is discussed in section VI.L of this document. For presentational purposes, the climate benefits associated with the average SC–GHG at a 3-percent discount rate are estimated to be \$5.9 billion. DOE does not have a single central SC–GHG point estimate and it emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates.<sup>9</sup>

DOE estimated the monetary health benefits of SO<sub>2</sub> and NO<sub>x</sub> emissions reductions, also discussed in section VI.L of this document. DOE estimated the present value of the health benefits would be \$3.6 billion using a 7-percent discount rate, and \$10.1 billion using a 3-percent discount rate.<sup>10</sup> DOE is currently only monetizing (for SO<sub>2</sub> and NO<sub>x</sub>) particulate matter (PM)<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits, but will

compare specific efficiency levels, is measured relative to the baseline product (see section VI.F.13 of this document).

<sup>4</sup> All monetary values in this document are expressed in 2021 dollars.

<sup>5</sup> The quantity refers to full-fuel-cycle (FFC) energy savings. FFC energy savings includes the energy consumed in extracting, processing, and transporting primary fuels (i.e., coal, natural gas, petroleum fuels), and, thus, presents a more complete picture of the impacts of energy efficiency standards. For more information on the FFC metric, see section VI.H.1 of this document.

<sup>6</sup> A metric ton is equivalent to 1.1 short tons. Results for emissions other than CO<sub>2</sub> are presented in short tons.

<sup>7</sup> DOE calculated emissions reductions relative to the no-new-standards case, which reflects key assumptions in the *Annual Energy Outlook 2022* (AEO2022). AEO2022 represents current federal and

state legislation and final implementation of regulations as of the time of its preparation. See section VI.K of this document for further discussion of AEO2022 assumptions that effect air pollutant emissions.

<sup>8</sup> See Interagency Working Group on Social Cost of Greenhouse Gases, Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide. Interim Estimates Under Executive Order 13990, Washington, DC, February 2021. [https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument\\_SocialCostofCarbonMethaneNitrousOxide.pdf](https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf).

<sup>9</sup> On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no

longer in effect, pending resolution of the federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this proposed rule, DOE has reverted to its approach prior to the injunction and presents monetized greenhouse gas abatement benefits where appropriate and permissible under law.

<sup>10</sup> DOE estimates the economic value of these emissions reductions resulting from the considered TSLs for the purpose of complying with the requirements of Executive Order 12866.

continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions.

Table I.3 summarizes the economic benefits and costs expected to result from the proposed standards for GSLs. There are other important unquantified effects, including certain unquantified

climate benefits, unquantified public health benefits from the reduction of toxic air pollutants and other emissions, unquantified energy security benefits, and distributional effects, among others.

TABLE I.3—SUMMARY OF ECONOMIC BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR GSLs (TSL 6)

	Billion 2021\$
<b>3% discount rate</b>	
Consumer Operating Cost Savings .....	25.0
Climate Benefits* .....	5.9
Health Benefits** .....	10.1
Total Benefits † .....	41.0
Consumer Incremental Product Costs ‡ .....	4.6
Net Benefits .....	36.4
<b>7% discount rate</b>	
Consumer Operating Cost Savings .....	9.7
Climate Benefits* (3% discount rate) .....	5.9
Health Benefits** .....	3.6
Total Benefits † .....	19.1
Consumer Incremental Product Costs ‡ .....	2.4
Net Benefits .....	16.7

**Note:** This table presents the costs and benefits associated with GSLs shipped in 2029–2058. These results include benefits to consumers which accrue after 2058 from the products shipped in 2029–2058.

\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC–CO<sub>2</sub>), methane (SC–CH<sub>4</sub>), and nitrous oxide (SC–N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate) (see section VI.L of this rulemaking). Together these represent the global SC–GHG. For presentational purposes of this table, the climate benefits associated with the average SC–GHG at a 3 percent discount rate are shown, but DOE does not have a single central SC–GHG point estimate. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this proposed rule, DOE has reverted to its approach prior to the injunction and presents monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. DOE is currently only monetizing (for NO<sub>x</sub> and SO<sub>2</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. See section VI.L of this document for more details.

† Total benefits for both the 3-percent and 7-percent cases are presented using the average SC–GHG with 3-percent discount rate, but the Department does not have a single central SC–GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates. See Table VII.27 for net benefits using all four SC–GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

The benefits and costs of the proposed standards can also be expressed in terms of annualized values. The monetary values for the total annualized net benefits are (1) the reduced consumer operating costs, minus (2) the increase in product purchase prices and installation costs, plus (3) the value of climate and health benefits of emission reduction, all annualized.<sup>11</sup> The

national operating savings are domestic private U.S. consumer monetary savings that occur as a result of purchasing the covered products and are measured for the lifetime of GSLs shipped in 2029–2058. The benefits associated with reduced emissions achieved as a result of the proposed standards are also calculated based on the lifetime of GSLs shipped in 2029–2058. Total benefits for

both the 3-percent and 7-percent cases are presented using the average social costs with 3-percent discount rate. Estimates of SC–GHG values are presented for all four discount rates in section VII.B.8 of this document. Table I.4 presents the total estimated monetized benefits and costs associated with the proposed standard, expressed in terms of annualized values.

<sup>11</sup>To convert the time-series of costs and benefits into annualized values, DOE calculated a present value in 2022, the year used for discounting the NPV of total consumer costs and savings. For the

benefits, DOE calculated a present value associated with each year’s shipments in the year in which the shipments occur (e.g., 2030), and then discounted the present value from each year to 2022. Using the

present value, DOE then calculated the fixed annual payment over a 30-year period, starting in the compliance year, that yields the same present value.



TABLE I.4—ANNUALIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR GSLs (TSL 6)

	Million 2021\$/year		
	Primary estimate	Low-net-benefits estimate	High-net-benefits estimate
<b>3% discount rate</b>			
Consumer Operating Cost Savings .....	1,521.4	1,469.8	1,586.0
Climate Benefits* .....	358.1	357.7	358.5
Health Benefits** .....	615.6	615.0	616.3
Total Benefits † .....	2,495.1	2,442.5	2,560.8
Consumer Incremental Product Costs ‡ .....	280.3	291.0	270.0
Net Benefits .....	2,214.8	2,151.6	2,290.7
<b>7% discount rate</b>			
Consumer Operating Cost Savings .....	1,171.5	1,135.9	1,215.2
Climate Benefits* (3% discount rate) .....	358.1	357.7	358.5
Health Benefits** .....	432.0	431.7	432.4
Total Benefits † .....	1,961.6	1,925.3	2,006.1
Consumer Incremental Product Costs ‡ .....	289.4	299.4	279.8
Net Benefits .....	1,672.2	1,625.9	1,726.3

**Note:** This table presents the costs and benefits associated with GSLs shipped in 2029–2058. These results include benefits to consumers which accrue after 2058 from the products shipped in 2029–2058. The Primary, Low Net Benefits, and High Net Benefits Estimates utilize projections of energy prices from the AEO2022 Reference case, Low Economic Growth case, and High Economic Growth case, respectively. In addition, LED lamp prices reflect a higher price learning rate in the Low Net Benefits Estimate, and a lower price learning rate in the High Net Benefits Estimate. See section VII.B.3.b for discussion. The methods used to derive projected price trends are explained in section VI.G.1.b of this document. Note that the Benefits and Costs may not sum to the Net Benefits due to rounding.

\* Climate benefits are calculated using four different estimates of the global SC–GHG (see section VI.L of this rulemaking). For presentational purposes of this table, the climate benefits associated with the average SC–GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC–GHG point estimate, and it emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this proposed rule, DOE has reverted to its approach prior to the injunction and presents monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. DOE is currently only monetizing (for SO<sub>2</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. See section VI.L of this document for more details.

† Total benefits for both the 3-percent and 7-percent cases are presented using the average SC–GHG with 3-percent discount rate, but the Department does not have a single central SC–GHG point estimate.

‡ Costs include incremental equipment costs as well as installation costs

DOE’s analysis of the national impacts of the proposed standards is described in sections VI.H of this document.

#### D. Conclusion

DOE has tentatively concluded that the proposed standards represent the maximum improvement in energy efficiency that is technologically feasible and economically justified, and would result in the significant conservation of energy. With regards to technological feasibility, products achieving these standard levels are already commercially available for all product classes covered by this proposal. As for economic justification, DOE’s analysis shows that the benefits of the proposed standard exceed, to a great extent, the burdens of the proposed standards. Using a 7-percent discount rate for consumer benefits and costs and NO<sub>x</sub> and SO<sub>2</sub> reduction

benefits, and a 3-percent discount rate case for GHG social costs, the estimated cost of the proposed standards for GSLs is \$289.4 million per year in increased product costs, while the estimated annual benefits are \$1.17 billion in reduced product operating costs, \$358.1 million in climate benefits, and \$432.0 million in health benefits. The net benefit amounts to \$1.67 billion per year.

The significance of energy savings offered by a new or amended energy conservation standard cannot be determined without knowledge of the specific circumstances surrounding a given rulemaking.<sup>12</sup> For example, some

<sup>12</sup> Procedures, Interpretations, and Policies for Consideration in New or Revised Energy Conservation Standards and Test Procedures for Consumer Products and Commercial/Industrial Equipment, 86 FR 70892, 70901 (Dec. 13, 2021).

covered products and equipment have most of their energy consumption occur during periods of peak energy demand. The impacts of these products on the energy infrastructure can be more pronounced than products with relatively constant demand. Accordingly, DOE evaluates the significance of energy savings on a case-by-case basis.

As previously mentioned, the standards are projected to result in estimated national FFC energy savings of 4.0 quads, the equivalent of the primary annual energy use of 43.0 million homes. In addition, they are projected to reduce CO<sub>2</sub> emissions by 130.63 Mt. Based on these findings, DOE has initially determined the energy savings from the proposed standard levels are “significant” within the meaning of 42 U.S.C. 6295(o)(3)(B). A

more detailed discussion of the basis for these tentative conclusions is contained in the remainder of this document and the accompanying TSD.

DOE also considered less-stringent energy efficiency levels as potential standards, and is still considering them in this rulemaking. However, DOE has tentatively concluded that TSL 6 achieves the maximum improvement in energy efficiency that is technologically feasible and economically justified.

Based on consideration of the public comments DOE receives in response to this document and related information collected and analyzed during the course of this rulemaking effort, DOE may adopt energy efficiency levels presented in this document that are lower than the proposed standards, or some combination of level(s) that incorporate the proposed standards in part.

## II. Introduction

The following section briefly discusses the statutory authority underlying this proposed rule, as well as some of the relevant historical background related to the establishment of standards for GSLs.

### A. Authority

EPCA authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. Title III, Part B of EPCA established the Energy Conservation Program for Consumer Products Other Than Automobiles. These products include GSLs, the subject of this document. 42 U.S.C. 6295(i)(6))

EPCA directs DOE to conduct two rulemaking cycles to evaluate energy conservation standards for GSLs. (42 U.S.C. 6295(i)(6)(A)–(B)) For the first rulemaking cycle, EPCA directed DOE to initiate a rulemaking process prior to January 1, 2014, to determine whether: (1) to amend energy conservation standards for GSLs and (2) the exemptions for certain incandescent lamps should be maintained or discontinued. (42 U.S.C. 6295(i)(6)(A)(i)) The rulemaking was not to be limited to incandescent lamp technologies and was required to include a consideration of a minimum standard of 45 lm/W for GSLs. (42 U.S.C. 6295(i)(6)(A)(ii)) EPCA provides that if the Secretary determined that the standards in effect for GSILs should be amended, a final rule must be published by January 1, 2017, with a compliance date at least 3 years after the date on which the final rule is published. (42 U.S.C. 6295(i)(6)(A)(iii)) The Secretary was also required to consider phased-in

effective dates after considering certain manufacturer and retailer impacts. (42 U.S.C. 6295(i)(6)(A)(iv)) If DOE failed to complete a rulemaking in accordance with 42 U.S.C. 6295(i)(6)(A)(i)–(iv), or if a final rule from the first rulemaking cycle did not produce savings greater than or equal to the savings from a minimum efficacy standard of 45 lm/W, the statute provides a “backstop” under which DOE was required to prohibit sales of GSLs that do not meet a minimum 45 lm/W standard. (42 U.S.C. 6295(i)(6)(A)(v)). As a result of DOE’s failure to complete a rulemaking in accordance with the statutory criteria, DOE codified this backstop requirement in a rule issued on May 9, 2022. 87 FR 27439 (May 2022 Backstop Final Rule)

EPCA further directs DOE to initiate a second rulemaking cycle by January 1, 2020, to determine whether standards in effect for GSILs (which are a subset of GSLs) should be amended with more stringent maximum wattage requirements than EPCA specifies, and whether the exemptions for certain incandescent lamps should be maintained or discontinued. (42 U.S.C. 6295(i)(6)(B)(i)) As in the first rulemaking cycle, the scope of the second rulemaking is not limited to incandescent lamp technologies. (42 U.S.C. 6295(i)(6)(B)(ii)) As previously stated in Section I of this document, DOE is publishing this NOPR pursuant to this second cycle of rulemaking, as well as section (m) of 42 U.S.C. 6295.

The energy conservation program under EPCA consists essentially of four parts: (1) testing, (2) labeling, (3) the establishment of Federal energy conservation standards, and (4) certification and enforcement procedures. Relevant provisions of EPCA specifically include definitions (42 U.S.C. 6291), test procedures (42 U.S.C. 6293), labeling provisions (42 U.S.C. 6294), energy conservation standards (42 U.S.C. 6295), and the authority to require information and reports from manufacturers (42 U.S.C. 6296).

Federal energy efficiency requirements for covered products established under EPCA generally supersede State laws and regulations concerning energy conservation testing, labeling, and standards. (42 U.S.C. 6297(a)–(c)) DOE may, however, grant waivers of Federal preemption for particular State laws or regulations, in accordance with the procedures and other provisions set forth under EPCA. (See 42 U.S.C. 6297(d))

Subject to certain criteria and conditions, DOE is required to develop test procedures to measure the energy efficiency, energy use, or estimated

annual operating cost of each covered product. (42 U.S.C. 6295(o)(3)(A) and (r)) Manufacturers of covered products must use the prescribed DOE test procedure as the basis for certifying to DOE that their products comply with the applicable energy conservation standards adopted under EPCA and when making representations to the public regarding the energy use or efficiency of those products. (42 U.S.C. 6293(c) and 42 U.S.C. 6295(s)) Similarly, DOE must use these test procedures to determine whether the products comply with standards adopted pursuant to EPCA. (42 U.S.C. 6295(s)) The DOE test procedures for GSLs appear at title 10 of the Code of Federal Regulations (CFR) part 430, subpart B, appendices R, W, BB, and DD.

DOE must follow specific statutory criteria for prescribing new or amended standards for covered products, including GSLs. Any new or amended standard for a covered product must be designed to achieve the maximum improvement in energy efficiency that the Secretary of Energy determines is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A) and 42 U.S.C. 6295(o)(3)(B)) Furthermore, DOE may not adopt any standard that would not result in the significant conservation of energy. (42 U.S.C. 6295(o)(3))

Moreover, DOE may not prescribe a standard: (1) for certain products, including GSLs, if no test procedure has been established for the product, or (2) if DOE determines by rule that the standard is not technologically feasible or economically justified. (42 U.S.C. 6295(o)(3)(A)–(B)) In deciding whether a proposed standard is economically justified, DOE must determine whether the benefits of the standard exceed its burdens. (42 U.S.C. 6295(o)(2)(B)(i)) DOE must make this determination after receiving comments on the proposed standard, and by considering, to the greatest extent practicable, the following seven statutory factors:

(1) The economic impact of the standard on manufacturers and consumers of the products subject to the standard;

(2) The savings in operating costs throughout the estimated average life of the covered products in the type (or class) compared to any increase in the price, initial charges, or maintenance expenses for the covered products that are likely to result from the standard;

(3) The total projected amount of energy (or as applicable, water) savings likely to result directly from the standard;

(4) Any lessening of the utility or the performance of the covered products likely to result from the standard;

(5) The impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the standard;

(6) The need for national energy and water conservation; and

(7) Other factors the Secretary of Energy (Secretary) considers relevant.

(42 U.S.C. 6295(o)(2)(B)(i)(I)–(VII))

Further, EPCA establishes a rebuttable presumption that a standard is economically justified if the Secretary finds that the additional cost to the consumer of purchasing a product complying with an energy conservation standard level will be less than three times the value of the energy savings during the first year that the consumer will receive as a result of the standard, as calculated under the applicable test procedure. (42 U.S.C. 6295(o)(2)(B)(iii))

EPCA also contains what is known as an “anti-backsliding” provision, which prevents the Secretary from prescribing any amended standard that either increases the maximum allowable energy use or decreases the minimum required energy efficiency of a covered product. (42 U.S.C. 6295(o)(1)) Also, the Secretary may not prescribe an amended or new standard if interested persons have established by a preponderance of the evidence that the standard is likely to result in the unavailability in the United States in any covered product type (or class) of performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as those generally available in the United States. (42 U.S.C. 6295(o)(4))

Additionally, EPCA specifies requirements when promulgating an energy conservation standard for a covered product that has two or more subcategories. DOE must specify a different standard level for a type or class of product that has the same function or intended use, if DOE determines that products within such group: (A) consume a different kind of energy from that consumed by other covered products within such type (or class); or (B) have a capacity or other performance-related feature which other products within such type (or class) do not have and such feature justifies a higher or lower standard. (42 U.S.C. 6295(q)(1)) In determining whether a performance-related feature justifies a different standard for a group of products, DOE must consider such factors as the utility to the consumer of the feature and other factors DOE deems appropriate. *Id.* Any rule prescribing such a standard must include an explanation of the basis on which such higher or lower level was established. (42 U.S.C. 6295(q)(2))

Finally, pursuant to the amendments contained in the Energy Independence and Security Act of 2007 (EISA), Public Law 110–140, any final rule for new or amended energy conservation standards promulgated after July 1, 2010, is required to address standby mode and off mode energy use. (42 U.S.C. 6295(gg)(3)) Specifically, when DOE adopts a standard for a covered product after that date, it must, if justified by the criteria for adoption of standards under EPCA (42 U.S.C. 6295(o)), incorporate standby mode and off mode energy use into a single standard, or, if that is not feasible, adopt a separate standard for such energy use for that product. (42 U.S.C. 6295(gg)(3)(A)–(B)) DOE determined that it is not feasible for GSLs included in the scope of this rulemaking to meet the off-mode criteria because there is no condition in which a GSL connected to main power is not already in a mode accounted for in either active or standby mode. DOE notes the existence of commercially available GSLs that operate in standby mode. DOE’s current test procedures for GSLs address standby mode and off mode energy use. In this rulemaking, DOE intends to incorporate such energy use into any amended energy conservation standards that it may adopt.

### B. Background

#### 1. History of Standards Rulemaking for General Service Lamps

Pursuant to its statutory authority to complete the first cycle of rulemaking for GSLs, DOE published a notice of proposed rulemaking (NOPR) on March 17, 2016, that addressed the first question that Congress directed it to consider—whether to amend energy conservation standards for GSLs (March 2016 NOPR). 81 FR 14528, 14629–14630 (Mar. 17, 2016). In the March 2016 NOPR, DOE stated that it would be unable to undertake any analysis regarding GSILs and other incandescent lamps because of a then-applicable congressional restriction (the Appropriations Rider). *See* 81 FR 14528, 14540–14541. The Appropriations Rider prohibited expenditure of funds appropriated by that law to implement or enforce: (1) 10 CFR 430.32(x), which includes maximum wattage and minimum rated lifetime requirements for GSILs; and (2) standards set forth in section 325(i)(1)(B) of EPCA (42 U.S.C. 6295(i)(1)(B)), which sets minimum lamp efficiency ratings for incandescent reflector lamps (IRLs). Under the Appropriations Rider, DOE was restricted from undertaking the analysis required to address the first question

presented by Congress, but was not so limited in addressing the second question—that is, DOE was not prevented from determining whether the exemptions for certain incandescent lamps should be maintained or discontinued. To address that second question, DOE published a Notice of Proposed Definition and Data Availability (NOPDDA), which proposed to amend the definitions of GSIL, GSL, and related terms (October 2016 NOPDDA). 81 FR 71794, 71815 (Oct. 18, 2016). The Appropriations Rider, which was originally adopted in 2011 and readopted and extended continuously in multiple subsequent legislative actions, expired on May 5, 2017, when the Consolidated Appropriations Act, 2017 was enacted.<sup>13</sup>

On January 19, 2017, DOE published two final rules concerning the definitions of GSL, GSIL, and related terms (January 2017 Definition Final Rules). 82 FR 7276; 82 FR 7322. The January 2017 Definition Final Rules amended the definitions of GSIL and GSL by bringing certain categories of lamps that had been excluded by statute from the definition of GSIL within the definitions of GSIL and GSL. DOE determined to use two final rules in 2017 to amend the definitions of GSIL and GSLs in order to address the majority of the definition changes in one final rule and the exemption for IRLs in the second final rule. These two rules were issued simultaneously, with the first rule eschewing a determination regarding the existing exemption for IRLs in the definition of GSL and the second rulemaking discontinuing that exemption from the GSL definition. 82 FR 7276, 7312; 82 FR 7322, 7323. As in the October 2016 NOPDDA, DOE stated that the January 2017 Definition Final Rules related only to the second question that Congress directed DOE to consider, regarding whether to maintain or discontinue “exemptions” for certain incandescent lamps. 82 FR 7276, 7277; 82 FR 7322, 7324 (See also 42 U.S.C. 6295(i)(6)(A)(i)(II)). That is, neither of the two final rules issued on January 19, 2017, established energy conservation standards applicable to GSLs. DOE explained that the Appropriations Rider prevented it from establishing, or even analyzing, standards for GSILs. 82 FR 7276, 7278. Instead, DOE explained that it would either impose standards for GSLs in the future pursuant to its authority to develop GSL standards, or

<sup>13</sup> See Consolidated Appropriations Act of 2017 (Pub. L. 115–31, div. D, tit. III); see also Consolidated Appropriations Act, 2018 (Pub. L. 115–141).

apply the backstop standard prohibiting the sale of lamps not meeting a 45 lm/W efficacy standard. 82 FR 7276, 7277–7278. The two final rules were to become effective as of January 1, 2020.

On March 17, 2017, the National Electrical Manufacturer's Association (NEMA) filed a petition for review of the January 2017 Definition Final Rules in the U.S. Court of Appeals for the Fourth Circuit. *National Electrical Manufacturers Association v. United States Department of Energy*, No. 17–1341. NEMA claimed that DOE “amend[ed] the statutory definition of ‘general service lamp’ to include lamps that Congress expressly stated were ‘not include[d]’ in the definition” and adopted an “unreasonable and unlawful interpretation of the statutory definition.” Pet. 2. Prior to merits briefing, the parties reached a settlement agreement under which DOE agreed, in part, to issue a notice of data availability requesting data for GSILs and other incandescent lamps to assist DOE in determining whether standards for GSILs should be amended (the first question of the rulemaking required by 42 U.S.C. 6295(i)(6)(A)(i)).

With the removal of the Appropriations Rider in the Consolidated Appropriations Act, 2017, DOE was no longer restricted from undertaking the analysis and decision-making required to address the first question presented by Congress, *i.e.*, whether to amend energy conservation standards for GSLs, including GSILs. Thus, on August 15, 2017, DOE published a notice of data availability and request for information (NODA) seeking data for GSILs and other incandescent lamps (August 2017 NODA). 82 FR 38613.

The purpose of the August 2017 NODA was to assist DOE in determining whether standards for GSILs should be amended. (42 U.S.C. 6295(i)(6)(A)(i)(I)) Comments submitted in response to the August 2017 NODA also led DOE to reconsider the decisions it had already made with respect to the second question presented to DOE—whether the exemptions for certain incandescent lamps should be maintained or discontinued. 84 FR 3120, 3122 (See also 42 U.S.C. 6295(i)(6)(A)(i)(II)) As a result of the comments received in response to the August 2017 NODA, DOE also re-assessed the legal interpretations underlying certain decisions made in the January 2017 Definition Final Rules. *Id.*

On February 11, 2019, DOE published a NOPR proposing to withdraw the revised definitions of GSL, GSIL, and the new and revised definitions of related terms that were to go into effect

on January 1, 2020 (February 2019 Definition NOPR). 84 FR 3120. In a final rule published September 5, 2019, DOE finalized the withdrawal of the definitions in the January 2017 Definition Final Rules and maintained the existing regulatory definitions of GSL and GSIL, which are the same as the statutory definitions of those terms (September 2019 Withdrawal Rule). 84 FR 46661. The September 2019 Withdrawal Rule revisited the same primary question addressed in the January 2017 Definition Final Rules, namely, the statutory requirement for DOE to determine whether “the exemptions for certain incandescent lamps should be maintained or discontinued.” 42 U.S.C. 6295(i)(6)(A)(i)(II) (See also 84 FR 46661, 46667). In the rule, DOE also addressed its interpretation of the statutory backstop at 42 U.S.C. 6295(i)(6)(A)(v) and concluded the backstop had not been triggered. 84 FR 46661, 46663–46664. DOE reasoned that 42 U.S.C. 6295(i)(6)(A)(iii) “does not establish an absolute obligation on the Secretary to publish a rule by a date certain.” 84 FR 46661, 46663. “Rather, the obligation to issue a final rule prescribing standards by a date certain applies if, and only if, the Secretary makes a determination that standards in effect for GSILs need to be amended.” *Id.* DOE further stated that, since it had not yet made the predicate determination on whether to amend standards for GSILs, the obligation to issue a final rule by a date certain did not yet exist and, as a result, the condition precedent to the potential imposition of the backstop requirement did not yet exist and no backstop requirement had yet been triggered. *Id.* at 84 FR 46664.

Similar to the January 2017 Definition Final Rules, the September 2019 Withdrawal Rule clarified that DOE was not determining whether standards for GSLs, including GSILs, should be amended. DOE stated it would make that determination in a separate rulemaking. *Id.* at 84 FR 46662. DOE initiated that separate rulemaking by publishing a notice of proposed determination (NOPD) on September 5, 2019, regarding whether standards for GSILs should be amended (September 2019 NOPD). 84 FR 46830. In conducting its analysis for that notice, DOE used the data and comments received in response to the August 2017 NODA and relevant data and comments received in response to the February 2019 Definition NOPR, and DOE tentatively determined that the current standards for GSILs do not need to be

amended because more stringent standards are not economically justified. *Id.* at 84 FR 46831. DOE finalized that tentative determination on December 27, 2019 (December 2019 Final Determination). 84 FR 71626. DOE also concluded in the December 2019 Final Determination that, because it had made the predicate determination not to amend standards for GSILs, there was no obligation to issue a final rule by January 1, 2017, and, as a result, the backstop requirement had not been triggered. *Id.* at 84 FR 71636.

Two petitions for review were filed in the U.S. Court of Appeals for the Second Circuit challenging the September 2019 Withdrawal Rule. The first petition was filed by 15 States,<sup>14</sup> New York City, and the District of Columbia. See *New York v. U.S. Department of Energy*, No. 19–3652 (2d Cir., filed Nov. 4, 2019). The second petition was filed by six organizations<sup>15</sup> that included environmental, consumer, and public housing tenant groups. See *Natural Resources Defense Council v. U.S. Department of Energy*, No. 19–3658 (2d Cir., filed Nov. 4, 2019). The petitions were subsequently consolidated. Merits briefing has been concluded, but the case has not been argued or submitted to the Circuit panel for decision. The case has been in abeyance since March 2021, pending further rulemaking by DOE.

Additionally, in two separate petitions also filed in the Second Circuit, groups of petitioners that were essentially identical to those that filed the lawsuit challenging the September 2019 Withdrawal Rule challenged the December 2019 Final Determination. See *Natural Resources Defense Council v. U.S. Department of Energy*, No. 20–699 (2d Cir., filed Feb. 25, 2020); *New York v. U.S. Department of Energy*, No. 20–743 (2d Cir., filed Feb. 28, 2020). On April 2, 2020, those cases were put into abeyance pending the outcome of the September 2019 Withdrawal Rule petitions.

On January 20, 2021, President Biden issued Executive Order (E.O.) 13990, “Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis.” 86 FR 7037 (Jan. 25, 2021). Section 1 of that Order lists a number of policies related to the

<sup>14</sup> The petitioning States are the States of New York, California, Colorado, Connecticut, Illinois, Maryland, Maine, Michigan, Minnesota, New Jersey, Nevada, Oregon, Vermont, and Washington and the Commonwealth of Massachusetts.

<sup>15</sup> The petitioning organizations are the Natural Resource Defense Council, Sierra Club, Consumer Federation of America, Massachusetts Union of Public Housing Tenants, Environment America, and U.S. Public Interest Research Group.

protection of public health and the environment, including reducing greenhouse gas emissions and bolstering the Nation’s resilience to climate change. *Id.* at 86 FR 7041. Section 2 of the Order instructs all agencies to review “existing regulations, orders, guidance documents, policies, and any other similar agency actions promulgated, issued, or adopted between January 20, 2017, and January 20, 2021, that are or may be inconsistent with, or present obstacles to, [these policies].” *Id.* Agencies are then directed, as appropriate and consistent with applicable law, to consider suspending, revising, or rescinding these agency actions and to immediately commence work to confront the climate crisis. *Id.*

In accordance with E.O. 13990, on May 25, 2021, DOE published a request for information (RFI) initiating a re-evaluation of its prior determination that the Secretary was not required to implement the statutory backstop requirement for GSLs. 86 FR 28001 (May 2021 Backstop RFI). DOE solicited information regarding the availability of lamps that would satisfy a minimum efficacy standard of 45 lm/W, as well as other information that may be relevant to a possible implementation of the statutory backstop. *Id.* On December 13, 2021, DOE published a NOPR proposing to codify in the CFR the 45 lm/W

backstop requirement for GSLs. 86 FR 70755 (December 2021 Backstop NOPR). On May 9, 2022, DOE published the May 2022 Backstop Final Rule codifying the 45 lm/W backstop requirement. 87 FR 27439. In the May 2022 Backstop Final Rule, DOE determined the backstop requirement applies because DOE failed to complete a rulemaking for GSLs in accordance with certain statutory criteria in 42 U.S.C. 6295(i)(6)(A).

On August 19, 2021, DOE published a NOPR to amend the current definitions of GSL and GSIL and adopt associated supplemental definitions to be defined as previously set forth in the January 2017 Definition Final Rules. 86 FR 46611. (August 2021 Definition NOPR). On May 9, 2022, DOE published a final rule adopting definitions of GSL and GSIL and associated supplemental definitions as set forth in the August 2021 Definition NOPR. 87 FR 27461 (May 2022 Definition Final Rule).

Upon issuance of the May 2022 Backstop Final Rule and the May 2022 Definition Final Rule, DOE concluded the first cycle of GSL rulemaking required by 42 U.S.C. 6295(i)(6)(A). This NOPR initiates the second cycle of GSL rulemaking under 42 U.S.C. 6295(i)(6)(B). As detailed above, EPCA directs DOE to initiate this rulemaking procedure no later than January 1, 2020. However, DOE is delayed in initiating

this second cycle because of the Appropriations Rider, DOE’s evolving position under the first rulemaking cycle, and the associated delays that resulted in DOE certifying the backstop requirement for GSLs two years after the January 1, 2020, date specified in the statute.

2. Current Standards

This is the second cycle of energy conservation standards rulemakings for GSLs. As noted in section II.B of this document, in the May 2022 Backstop Final Rule, DOE codified the statutory backstop requirement prohibiting sales of GSLs that do not meet a 45 lm/W requirement. Because incandescent and halogen GSLs would not be able to meet the 45 lm/W requirement, they are not being considered in this analysis. The analysis does take into consideration existing standards for MBCFLs by ensuring that proposed levels do not decrease the existing minimum required energy efficiency of MBCFLs in violation of EPCA’s anti-backsliding provision, which precludes DOE from amending an existing energy conservation standard to permit greater energy use or a lesser amount of energy efficiency (*see* 42 U.S.C. 6295(o)(1)). The current standards for MBCFLs are summarized in Table II.1. 10 CFR 430.32(u).

TABLE II.1—EXISTING STANDARDS FOR MBCFLS

Lamp configuration	Lamp power (W)	Minimum efficacy (lm/W)
Bare lamp	Lamp power <15	45.0
	Lamp power ≥15	60.0
Covered lamp, no reflector	Lamp power <15	<sup>16</sup> 45.0
	15 ≥ amp power <19	48.0
	19 ≥ amp power <25	50.0
	Lamp power ≥25	55.0
Lumen Maintenance at 1,000 Hours	The average of at least 5 lamps must be a minimum 90% of initial (100-hour) lumen output at 1,000 hours of rated life.	
Lumen Maintenance at 40% of Rated Lifetime	80% of initial (100-hour) rating (per ANSI C78.5 Clause 4.10).	
Rapid Cycle Stress Test	Per ANSI C78.5 and IESNA LM65 (clauses 2,3,5, and 6) exception: cycle times must be 5 minutes on, 5 minutes off. Lamp will be cycled once for every two hours of rated life. At least 5 lamps must meet or exceed the minimum number of cycles.	
Lamp Life	≥6,000 hours as declared by the manufacturer on packaging. ≤50% of the tested lamps failed at rated lifetime. At 80% of rated life, statistical methods may be used to confirm lifetime claims based on sample performance.	

MBCFLs fall within the Integrated Omnidirectional Short product class (*see* section VI.A.1 for further details on

product classes). Because DOE determined that lamp cover (*i.e.*, bare or covered) is not a class-setting factor in

the product class structure established in this analysis, the baseline efficacy requirements are determined by lamp

<sup>16</sup>The MBCFL energy conservation standards at 10 CFR 430.42(u)(1) are subject to the sales prohibition in paragraph (dd) of this same section.

wattage. Therefore, for products with wattages less than 15 W, which fall into the Integrated Omnidirectional Short product class, DOE set the baseline efficacy at 45 lm/W (the highest of the existing standards for that wattage

range) to prevent increased energy usage in violation of EPCA’s anti-backsliding provision. For products with wattages greater than or equal to 15 W, which fall into the Integrated Omnidirectional Short product class, DOE set the

baseline efficacy at 60 lm/W to prevent increased energy usage in violation of EPCA’s anti-backsliding provision. Table II.2 shows the baseline efficacy requirements for the Integrated Omnidirectional Short product class.

TABLE II.2—INTEGRATED OMNIDIRECTIONAL SHORT CURRENT STANDARD EFFICACY REQUIREMENTS

Product class	Lamp power (W)	Minimum efficacy (lm/W)
Integrated GSLS .....	<15	45.0
	≥15	60.0

*C. Deviation From Appendix A*

In accordance with section 3(a) of 10 CFR part 430, subpart C, appendix A (appendix A), DOE notes that it is deviating from the provisions in appendix A regarding the pre-NOPR stages for an energy conservation standards rulemaking. Section 6(a)(1) specifies that as the first step in any proceeding to consider establishing or amending any energy conservation standard, DOE will publish a document in the **Federal Register** announcing that DOE is considering initiating a rulemaking proceeding. Section 6(a)(1) states that as part of that document, DOE will solicit submission of related comments, including data and information on whether DOE should proceed with the rulemaking, including whether any new or amended rule would be cost effective, economically justified, technologically feasible, or would result in a significant savings of energy. Section 6(a)(2) of appendix A states that if the Department determines it is appropriate to proceed with a rulemaking, the preliminary stages of a rulemaking to issue or amend an energy conservation standard that DOE will undertake will be a framework document and preliminary analysis, or an advance notice of proposed rulemaking (ANOPR). DOE finds it necessary and appropriate to deviate from this step in Appendix A and to publish this NOPR without conducting these preliminary stages. Completion of the second cycle of GSL rulemaking is overdue under the January 1, 2020 statutory deadline in 42 U.S.C. 6295(i)(6)(B), so DOE seeks to complete its statutory obligations as expeditiously as possible. Under the requirements of 42 U.S.C. 6295(i)(6)(B)(i), DOE is to initiate a second rulemaking procedure by January 1, 2020, to determine whether standards in effect for GSILs should be amended. The scope of this rule is not limited to incandescent lamp technologies and thus includes GSLS. (42 U.S.C. 6295(i)(6)(B)(ii)) Further, as

discussed in section II.B.1 of this document, in settling the lawsuit filed by NEMA following the January 2017 Definition Final Rules (Petition for Review, *Nat’l Elec. Mfrs. Ass’n v. U.S. Dep’t of Energy*, No. 17–1341 (4th Cir.)), DOE agreed to use its best efforts to issue a supplemental notice of proposed rulemaking regarding whether to amend or adopt standards for general service light-emitting diode (LED) lamps, that may also address whether to adopt standards for compact fluorescent lamps (CFLs), by May 2018. Given this context, DOE has determined that proceeding with this rulemaking as expeditiously as is reasonably practical is the appropriate approach. Additionally, while DOE is not publishing pre-NOPR documents, DOE has tentatively found that the methodologies used for the March 2016 NOPR continue to apply to the current market for GSLS. DOE has updated analytical inputs in its analysis from the March 2016 NOPR where appropriate and welcomes submission of additional data, information, and comments.

**III. General Discussion**

DOE developed this proposal after considering data and information from interested parties that represent a variety of interests.

*A. Product Classes and Scope of Coverage*

When evaluating and establishing energy conservation standards, DOE divides covered products into product classes by the type of energy used or by capacity or other performance-related features that justify differing standards. In making a determination whether a performance-related feature justifies a different standard, DOE must consider such factors as the utility of the feature to the consumer and other factors DOE determines are appropriate. (42 U.S.C. 6295(q)) For further details on product classes, see section VI.A.1 of this document and chapter 3 of the NOPR technical support document (TSD).

*B. Test Procedure*

EPCA sets forth generally applicable criteria and procedures for DOE’s adoption and amendment of test procedures. (42 U.S.C. 6293) Manufacturers of covered products must use these test procedures to certify to DOE that their product complies with energy conservation standards and to quantify the efficiency of their product. DOE will finalize a test procedure establishing methodologies used to evaluate proposed energy conservation standards prior to publication of a NOPR proposing new or amended energy conservation standards. Section 8(d)(1) of appendix A.

DOE’s test procedures for GSILs and IRLs are set forth at 10 CFR part 430, subpart B, appendix R. DOE’s test procedure for CFLs is set forth at 10 CFR part 430, subpart B, appendix W. DOE’s test procedure for LED lamps is set forth at 10 CFR part 430, subpart B, appendix BB. DOE’s test procedure for GSLS that are not GSILs, IRLs, CFLs, or integrated LED lamps is set forth at 10 CFR part 430, subpart B, appendix DD.

*C. Technological Feasibility*

1. General

In each energy conservation standards rulemaking, DOE conducts a screening analysis based on information gathered on all current technology options and prototype designs that could improve the efficiency of the products or equipment that are the subject of the rulemaking. As the first step in such an analysis, DOE develops a list of technology options for consideration in consultation with manufacturers, design engineers, and other interested parties. DOE then determines which of those means for improving efficiency are technologically feasible. DOE considers technologies incorporated in commercially-available products or in working prototypes to be technologically feasible. Sections 6(b)(3)(i) and 7(b)(1) of appendix A.

After DOE has determined that particular technology options are technologically feasible, it further evaluates each technology option in light of the following additional screening criteria: (1) practicability to manufacture, install, and service; (2) adverse impacts on product utility or availability; (3) adverse impacts on health or safety, and (4) unique-pathway proprietary technologies. Sections 6(b)(3)(ii) through (v) and 7(b)(2) through (5) of appendix A. Section VI.B of this document discusses the results of the screening analysis for GSLs, particularly the designs DOE considered, those it screened out, and those that are the basis for the standards considered in this rulemaking. For further details on the screening analysis for this rulemaking, see chapter 4 of the NOPR TSD.

## 2. Maximum Technologically Feasible Levels

When DOE proposes to adopt an amended standard for a type or class of covered product, it must determine the maximum improvement in energy efficiency or maximum reduction in energy use that is technologically feasible for such product. (42 U.S.C. 6295(p)(1)) Accordingly, in the engineering analysis, DOE determined the maximum technologically feasible (max-tech) improvements in energy efficiency for GSLs, using the design parameters for the most efficient products available on the market or in working prototypes. The max-tech levels that DOE determined for this rulemaking are described in section VI.C.4.e of this proposed rule and in chapter 5 of the NOPR TSD.

### D. Energy Savings

#### 1. Determination of Savings

For each trial standard level (TSL), DOE projected energy savings from application of the TSL to GSLs purchased in the 30-year period that begins in the first full year of compliance with the proposed standards (2029–2058).<sup>17</sup> The savings are measured over the entire lifetime of GSLs purchased in the previous 30-year period. DOE quantified the energy savings attributable to each TSL as the difference in energy consumption between each standards case and the no-new-standards case. The no-new-standards case represents a projection of

<sup>17</sup> Each TSL is composed of specific efficiency levels for each product class. The TSLs considered for this NOPR are described in section VII.A of this document. DOE conducted a sensitivity analysis that considers impacts for products shipped in a 9-year period.

energy consumption that reflects how the market for a product would likely evolve in the absence of amended energy conservation standards.

DOE used its national impact analysis (NIA) spreadsheet model to estimate national energy savings (NES) from potential amended or new standards for GSLs. The NIA spreadsheet model (described in section VI.H of this document) calculates energy savings in terms of site energy, which is the energy directly consumed by products at the locations where they are used. For electricity, DOE reports national energy savings in terms of primary energy savings, which is the savings in the energy that is used to generate and transmit the site electricity. DOE also calculates NES in terms of FFC energy savings. The FFC metric includes the energy consumed in extracting, processing, and transporting primary fuels (*i.e.*, coal, natural gas, petroleum fuels), and thus presents a more complete picture of the impacts of energy conservation standards.<sup>18</sup> DOE's approach is based on the calculation of an FFC multiplier for each of the energy types used by covered products or equipment. For more information on FFC energy savings, see section VI.H.1 of this document.

#### 2. Significance of Savings

To adopt any new or amended standards for a covered product, DOE must determine that such action would result in significant energy savings. (42 U.S.C. 6295(o)(3)(B))

The significance of energy savings offered by a new or amended energy conservation standard cannot be determined without knowledge of the specific circumstances surrounding a given rulemaking. For example, some covered products and equipment have most of their energy consumption occur during periods of peak energy demand. The impacts of these products on the energy infrastructure can be more pronounced than products with relatively constant demand. In evaluating the significance of energy savings, DOE considers differences in primary energy and FFC effects for different covered products and equipment when determining whether energy savings are significant. Primary energy and FFC effects include the energy consumed in electricity production (depending on load shape), in distribution and transmission, and in extracting, processing, and transporting

<sup>18</sup> The FFC metric is discussed in DOE's statement of policy and notice of policy amendment. 76 FR 51282 (Aug. 18, 2011), as amended at 77 FR 49701 (Aug. 17, 2012).

primary fuels (*i.e.*, coal, natural gas, petroleum fuels), and thus present a more complete picture of the impacts of energy conservation standards.

Accordingly, DOE evaluates the significance of energy savings on a case-by-case basis. As mentioned previously, the proposed standards are projected to result in estimated national FFC energy savings of 4.0 quads, the equivalent of the electricity use of 43 million homes in one year. DOE has initially determined the energy savings from the proposed standard levels are "significant" within the meaning of 42 U.S.C. 6295(o)(3)(B).

### E. Economic Justification

#### 1. Specific Criteria

As noted previously, EPCA provides seven factors to be evaluated in determining whether a potential energy conservation standard is economically justified. (42 U.S.C. 6295(o)(2)(B)(i)(I)–(VII)) The following sections discuss how DOE has addressed each of those seven factors in this proposed rulemaking.

##### a. Economic Impact on Manufacturers and Consumers

In determining the impacts of a potential amended standard on manufacturers, DOE conducts an MIA, as discussed in section VI.J of this document. DOE first uses an annual cash-flow approach to determine the quantitative impacts. This step includes both a short-term assessment—based on the cost and capital requirements during the period between when a regulation is issued and when entities must comply with the regulation—and a long-term assessment over a 30-year period. The industry-wide impacts analyzed include (1) INPV, which values the industry on the basis of expected future cash flows, (2) cash flows by year, (3) changes in revenue and income, and (4) other measures of impact, as appropriate. Second, DOE analyzes and reports the impacts on different types of manufacturers, including impacts on small manufacturers. Third, DOE considers the impact of standards on domestic manufacturer employment and manufacturing capacity, as well as the potential for standards to result in plant closures and loss of capital investment. Finally, DOE takes into account cumulative impacts of various DOE regulations and other regulatory requirements on manufacturers.

For individual consumers, measures of economic impact include the changes in LCC and PBP associated with new or amended standards. These measures are discussed further in the following

section. For consumers in the aggregate, DOE also calculates the national net present value of the consumer costs and benefits expected to result from particular standards. DOE also evaluates the impacts of potential standards on identifiable subgroups of consumers that may be affected disproportionately by a standard.

**b. Savings in Operating Costs Compared to Increase in Price (LCC and PBP)**

EPCA requires DOE to consider the savings in operating costs throughout the estimated average life of the covered product in the type (or class) compared to any increase in the price of, or in the initial charges for, or maintenance expenses of, the covered product that are likely to result from a standard. (42 U.S.C. 6295(o)(2)(B)(i)(II)) DOE conducts this comparison in its LCC and PBP analysis.

The LCC is the sum of the purchase price of a product (including its installation) and the operating expense (including energy, maintenance, and repair expenditures) discounted over the lifetime of the product. The LCC analysis requires a variety of inputs, such as product prices, product energy consumption, energy prices, maintenance and repair costs, product lifetime, and discount rates appropriate for consumers. To account for uncertainty and variability in specific inputs, such as product lifetime and discount rate, DOE uses a distribution of values, with probabilities attached to each value.

The PBP is the estimated amount of time (in years) it takes consumers to recover the increased purchase cost (including installation) of a more-efficient product through lower operating costs. DOE calculates the PBP by dividing the change in purchase cost due to a more-stringent standard by the change in annual operating cost for the year that standards are assumed to take effect.

For its LCC and PBP analysis, DOE assumes that consumers will purchase the covered products in the first full year of compliance with new or amended standards. The LCC savings for the considered efficiency levels are calculated relative to the case that reflects projected market trends in the absence of new or amended standards. DOE's LCC and PBP analysis is discussed in further detail in section VI.F of this document.

**c. Energy Savings**

Although significant conservation of energy is a separate statutory requirement for adopting an energy conservation standard, EPCA requires

DOE, in determining the economic justification of a standard, to consider the total projected energy savings that are expected to result directly from the standard. (42 U.S.C. 6295(o)(2)(B)(i)(III)) As discussed in section VI.H of this document, DOE uses the NIA spreadsheet model to project national energy savings.

**d. Lessening of Utility or Performance of Products**

In establishing product classes and in evaluating design options and the impact of potential standard levels, DOE evaluates potential standards that would not lessen the utility or performance of the considered products. (42 U.S.C. 6295(o)(2)(B)(i)(IV)) Based on data available to DOE, the standards proposed in this document would not reduce the utility or performance of the products under consideration in this rulemaking.

**e. Impact of Any Lessening of Competition**

EPCA directs DOE to consider the impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from a proposed standard. (42 U.S.C. 6295(o)(2)(B)(i)(V)) It also directs the Attorney General to determine the impact, if any, of any lessening of competition likely to result from a proposed standard and to transmit such determination to the Secretary within 60 days of the publication of a proposed rule, together with an analysis of the nature and extent of the impact. (42 U.S.C. 6295(o)(2)(B)(ii)) DOE will transmit a copy of this proposed rule to the Attorney General with a request that the Department of Justice (DOJ) provide its determination on this issue. DOE will publish and respond to the Attorney General's determination in the final rule. DOE invites comment from the public regarding the competitive impacts that are likely to result from this proposed rule. In addition, stakeholders may also provide comments separately to DOJ regarding these potential impacts. See the **ADDRESSES** section for information to send comments to DOJ.

**f. Need for National Energy Conservation**

DOE also considers the need for national energy and water conservation in determining whether a new or amended standard is economically justified. (42 U.S.C. 6295(o)(2)(B)(i)(VI)) The energy savings from the proposed standards are likely to provide improvements to the security and reliability of the Nation's energy system.

Reductions in the demand for electricity also may result in reduced costs for maintaining the reliability of the Nation's electricity system. DOE conducts a utility impact analysis to estimate how standards may affect the Nation's needed power generation capacity, as discussed in section VI.M of this document.

DOE maintains that environmental and public health benefits associated with the more efficient use of energy are important to take into account when considering the need for national energy conservation. The proposed standards are likely to result in environmental benefits in the form of reduced emissions of air pollutants and greenhouse gases (GHGs) associated with energy production and use. DOE conducts an emissions analysis to estimate how potential standards may affect these emissions, as discussed in section VI.K; the estimated emissions impacts are reported in section VII.B.6 of this document. DOE also estimates the economic value of emissions reductions resulting from the considered TSLs, as discussed in section VI.L of this document.

**g. Other Factors**

In determining whether an energy conservation standard is economically justified, DOE may consider any other factors that the Secretary deems to be relevant. (42 U.S.C. 6295(o)(2)(B)(i)(VII)) To the extent DOE identifies any relevant information regarding economic justification that does not fit into the other categories described previously, DOE could consider such information under "other factors."

**2. Rebuttable Presumption**

As set forth in 42 U.S.C. 6295(o)(2)(B)(iii), EPCA creates a rebuttable presumption that an energy conservation standard is economically justified if the additional cost to the consumer of a product that meets the standard is less than three times the value of the first year's energy savings resulting from the standard, as calculated under the applicable DOE test procedure. DOE's LCC and PBP analyses generate values used to calculate the effects that proposed energy conservation standards would have on the payback period for consumers. These analyses include, but are not limited to, the 3-year payback period contemplated under the rebuttable-presumption test. In addition, DOE routinely conducts an economic analysis that considers the full range of impacts to consumers, manufacturers, the Nation, and the environment, as required under 42 U.S.C.



6295(o)(2)(B)(i). The results of this analysis serve as the basis for DOE's evaluation of the economic justification for a potential standard level (thereby supporting or rebutting the results of any preliminary determination of economic justification). The rebuttable presumption payback calculation is discussed in section VI.F.11 of this proposed rule.

#### IV. Scope of Coverage

This section addresses the scope of coverage of this rulemaking. 42 U.S.C. 6295(i)(6)(B)(ii) of EPCA provides that this rulemaking scope shall not be limited to incandescent technologies. In accordance with this provision, the scope of this rulemaking encompasses other GSLs in addition to GSILs. Additionally, 42 U.S.C. 6295(i)(6)(B)(i)(II) of EPCA directs DOE to consider whether the exemptions for certain incandescent lamps should be maintained or discontinued. In this NOPR, DOE reviews the regulatory definitions of GSL, GSIL and supporting definitions adopted in the May 2022 Definition Final Rule and tentatively determines that no amendments are needed with regards to maintenance or discontinuation of exemptions. DOE is proposing minor updates to clarify certain supplemental definitions adopted in the May 2022 Definition Final Rule.

##### *A. Definitions of General Service Lamp, Compact Fluorescent Lamp, General Service LED Lamp, General Service OLED Lamp, General Service Incandescent Lamp*

In the September 2019 Definition Final Rule, DOE withdrew the definitions adopted in the January 2017 Definition Final Rules and maintained the existing regulatory definitions of GSL and GSIL, which are the same as the statutory definitions of those terms. 84 FR 46661, 46662. As noted in section II.B.1 of this document, in the August 2021 Definition NOPR, DOE revisited its conclusions in the September 2019 Definition Final Rule and proposed to amend the definitions of GSL and GSIL and associated supplemental definitions to be defined as previously set forth in the January 2017 Definition Final Rules. In the May 2022 Definition Final Rule, DOE discussed comments received regarding the August 2021 Definition NOPR and adopted the GSL and GSIL definitions and associated supplemental definitions as proposed in the August 2021 Definition NOPR. 87 FR 27461. The current regulatory definitions for GSL, CFL, general service LED lamp, general service OLED lamp, and GSIL

are described in the following paragraphs.

A general service lamp has the following characteristics: (1) an ANSI base; (2) able to operate at a voltage of 12 volts or 24 volts, at or between 100 to 130 volts, at or between 220 to 240 volts, or of 277 volts for integrated lamps or is able to operate at any voltage for non-integrated lamps; (3) has an initial lumen output of greater than or equal to 310 lumens (or 232 lumens for modified spectrum general service incandescent lamps) and less than or equal to 3,300 lumens; (4) is not a light fixture; (5) is not an LED downlight retrofit kit; and (6) is used in general lighting applications. General service lamps include, but are not limited to, general service incandescent lamps, compact fluorescent lamps, general service light-emitting diode lamps, and general service organic light emitting diode lamps. General service lamps do not include: (1) Appliance lamps; (2) Black light lamps; (3) Bug lamps; (4) Colored lamps; (5) G shape lamps with a diameter of 5 inches or more as defined in ANSI C79.1–2002 (incorporated by reference; see § 430.3); (6) General service fluorescent lamps; (7) High intensity discharge lamps; (8) Infrared lamps; (9) J, JC, JCD, JCS, JCV, JCX, JD, JS, and JT shape lamps that do not have Edison screw bases; (10) Lamps that have a wedge base or prefocus base; (11) Left-hand thread lamps; (12) Marine lamps; (13) Marine signal service lamps; (14) Mine service lamps; (15) MR shape lamps that have a first number symbol equal to 16 (diameter equal to 2 inches) as defined in ANSI C79.1–2002 (incorporated by reference; see § 430.3), operate at 12 volts, and have a lumen output greater than or equal to 800; (16) Other fluorescent lamps; (17) Plant light lamps; (18) R20 short lamps; (19) Reflector lamps (as defined in this section) that have a first number symbol less than 16 (diameter less than 2 inches) as defined in ANSI C79.1–2002 (incorporated by reference; see § 430.3) and that do not have E26/E24, E26d, E26/50x39, E26/53x39, E29/28, E29/53x39, E39, E39d, EP39, or EX39 bases; (20) S shape or G shape lamps that have a first number symbol less than or equal to 12.5 (diameter less than or equal to 1.5625 inches) as defined in ANSI C79.1–2002 (incorporated by reference; see § 430.3); (21) Sign service lamps; (22) Silver bowl lamps; (23) Showcase lamps; (24) Specialty MR lamps; (25) T-shape lamps that have a first number symbol less than or equal to 8 (diameter less than or equal to 1 inch) as defined in ANSI C79.1–2002 (incorporated by

reference; see § 430.3), nominal overall length less than 12 inches, and that are not compact fluorescent lamps (as defined in this section); (26) Traffic signal lamps. 87 FR 27461, 27480–27481.

A compact fluorescent lamp is an integrated or non-integrated single-base, low-pressure mercury, electric-discharge source. In this lamp a fluorescing coating transforms some of the ultraviolet energy generated by the mercury discharge into light. The term does not include circline or U-shaped lamps. 10 CFR 430.2.

A general service light-emitting diode (LED) lamp is an integrated or non-integrated LED lamp designed for use in general lighting applications. It uses light-emitting diodes as the primary source of light. 87 FR 27461, 27481.

A general service organic light-emitting diode (OLED) lamp is an integrated or non-integrated OLED lamp designed for use in general lighting applications. It uses organic light-emitting diodes as the primary source of light. 87 FR 27461, 27481.

A general service incandescent lamp is a standard incandescent or halogen type lamp that is intended for general service applications. It has the following characteristics: (1) medium screw base; (2) lumen range of not less than 310 lumens and not more than 2,600 lumens or, in the case of a modified spectrum lamp, not less than 232 lumens and not more than 1,950 lumens; and (3) capable of being operated at a voltage range at least partially within 110 and 130 volts. This definition does not apply to the following incandescent lamps—(1) An appliance lamp; (2) A black light lamp; (3) A bug lamp; (4) A colored lamp; (5) A G shape lamp with a diameter of 5 inches or more as defined in ANSI C79.1–2002 (incorporated by reference; see § 430.3); (6) An infrared lamp; (7) A left-hand thread lamp; (8) A marine lamp; (9) A marine signal service lamp; (10) A mine service lamp; (11) A plant light lamp; (12) An R20 short lamp; (13) A sign service lamp; (14) A silver bowl lamp; (15) A showcase lamp; and (16) A traffic signal lamp. 87 FR 27461, 27480.

As stated, this rulemaking is being conducted in accordance with 42 U.S.C. 6295(i)(6)(B). Under this provision, DOE must determine whether exemptions for certain incandescent lamps should be maintained or discontinued based, in part, on exempted lamp sales data collected by the Secretary from manufacturers.

As part of the first rulemaking cycle for GSLs, in the January 2017 Definition Final Rules and May 2022 Definition Final Rule, DOE also determined whether exemptions for certain

incandescent lamps should be maintained or discontinued based, in part, on exempted lamp sales data collected by the Secretary from manufacturers under 42 U.S.C. 6295(i)(6)(A)(i)(II). DOE conducted this analysis with the understanding that the purpose was to ensure that a given exemption would not impair the effectiveness of GSL standards by leaving available a convenient substitute that was not regulated as a GSL. Therefore, DOE based its decision for each exemption on an assessment of whether the exemption encompassed lamps that could provide general illumination and could functionally be a ready substitute for lamps already covered as GSLs. The technical characteristics of lamps in a given exemption and the volume of sales of those lamps were also considered. 82 FR 7276, 7288; 87 FR 27461, 27465–27467. Subsequently, in the May 2022 Definition Final Rule, DOE reaffirmed its conclusions in the January 2017 Definition Final Rules and discontinued the exemptions from the GSIL definition for rough service lamps; shatter-resistant lamps; three-way incandescent lamps; vibration service lamps; reflector lamps; T-shape lamps of 40 W or less or length of 10 inches or more; and B, BA, CA, F, G16–1/2, G25, G30, S, M–14 lamps of 40 W or less. 87 FR 27461, 27480–27481.

DOE has reviewed the remaining exemptions from the GSIL and GSL definitions. DOE's review of lamp specifications indicates that the exempted lamps continue to have features that do not make them suitable as substitutes for GSLs. Further review of the market indicates that they remain niche products. Hence, DOE finds that the lamps exempted in the May 2022 Definition Final Rule have not acquired technical characteristics that make them ready substitutes for GSLs or have not increased in sales. Therefore, DOE has tentatively determined that no amendments are needed to the definitions of GSIL and GSL as determined in the May 2022 Definition Final Rule.

### B. Supporting Definitions

In the May 2022 Definition Final Rule, DOE adopted supporting definitions for GSLs and GSILs as proposed in the August 2021 Definition NOPR and set forth in the January 2017 Definition Final Rules. 87 FR 27461. These included definitions for “black light lamp,” “bug lamp,” “colored lamp,” “infrared lamp,” “left-hand thread lamp,” “light fixture,” “marine lamp,” “marine signal service lamp,” “mine service lamp,” “non-integrated lamp,” “pin base lamp,” “plant light

lamp,” “reflector lamp,” “showcase lamp,” “sign service lamp,” “silver bowl lamp,” “specialty MR lamp,” and “traffic signal lamp.”

In this NOPR, DOE is proposing minor updates to certain supplemental definitions adopted in the May 2022 Definition Final Rule. Specifically, DOE is proposing to add an industry reference to the definition of LED downlight retrofit kit by specifying that it must be a retrofit kit classified or certified to UL 1598C–2014.<sup>19</sup> Additionally, DOE is proposing to update the industry standards referenced in the definitions of “Reflector lamp” and “Showcase lamp.” The current definitions for “Showcase lamp” and “Reflector lamp” reference ANSI C78.20–2003<sup>20</sup> and ANSI C79.1–2002.<sup>21</sup> In this NOPR, DOE is proposing to remove the reference to ANSI C78.20–2003 from the definitions of “Showcase lamp” and “Reflector lamp.” ANSI C78.20–2003 is an industry standard for A, G, PS, and similar shapes with E26 bases and therefore is not relevant to these lamp types. Further, ANSI has replaced ANSI C79.1–2002 with ANSI C78.79–2014 (R2020).<sup>22</sup> ANSI 79.1–2002 is referenced in the: (1) “Specialty MR lamp” definition; (2) “Reflector lamp” definition; (3) “General service incandescent lamp” definition with respect to a G shape lamp with a diameter of 5 inches or more; and (4) “General service lamp” definition with respect to G shape lamps with a diameter of 5 inches or more; MR shape lamps that have a first number symbol equal to 16; Reflector lamps that have a first number symbol less than 16; S shape or G shape lamps that have a first number symbol less than or equal to 12.5; T shape lamps that have a first number symbol less than or equal to 8. Accordingly, DOE proposes to revise the references to ANSI C79.1–2002 to ANSI C78.79–2014 (R2020) in all the aforementioned definitions.

DOE requests comments on the proposed updates to industry references

<sup>19</sup> UL, UL1598C Standard for Safety Light-Emitting Diode (LED) Retrofit Luminaire Conversion Kits. Approved January 12, 2017.

<sup>20</sup> American National Standards Institute, ANSI C78.20–2003 American National Standard for Electric Lamps—A, G, PS, and Similar Shapes with E26 Medium Screw Bases. Approved October 30, 2003.

<sup>21</sup> American National Standards Institute, ANSI C79.1–2002 American National Standard For Electric Lamps—Nomenclature for Glass Bulbs Intended for Use with Electric Lamps. Approved September 16, 2002.

<sup>22</sup> American National Standards Institute, ANSI C78.79–2014 (R2020) American National Standard for Electric Lamps—Nomenclature for Envelope Shapes Intended for Use with Electric Lamps. Approved January 17, 2020.

in the definitions of “General service incandescent lamp,” “General service lamp,” “LED downlight retrofit kit,” “Reflector lamp,” “Showcase lamp,” and “Specialty MR lamp.” See section IX.E for a list of issues on which DOE seeks comment.

In this NOPR, DOE is proposing a new supporting term, “Circadian-friendly integrated LED lamp” and its definition. This lamp type will be excluded from the GSL definition. DOE has identified commercially available integrated LED lamps that are marketed as aiding in the human sleep-wake (*i.e.*, circadian) cycle by changing the light spectrum. For example, the Soraa HEALTHY™ lamp and the NorbSLEEP lamp specify decrease or removal of blue light from the light spectrum emitted by the lamp to ensure proper melatonin production for better sleep.<sup>23</sup> DOE observed that these were integrated LED lamps with efficacies ranging from 47.8 lm/W to 85.7 lm/W. Because these lamps offer a utility to consumers and do not have high efficacies, DOE is proposing to exempt them from standards. Hence, DOE is proposing to define the exempt lamp type, circadian-friendly integrated LED lamp, as an integrated LED lamp that

(1) Is designed and marketed for use in the human sleep-wake (circadian) cycle;

(2) Is designed and marketed as an equivalent replacement for a 40 W or 60 W incandescent lamp;

(3) Has at least one setting that decreases or removes standard spectrum radiation emission in the 440 nm to 490 nm wavelength range; and

(4) Is sold in packages of two lamps or less.

The first criterion specifies the application of the lamp. For the second criterion, because these lamps are mainly available in the 500 to 800 lumen range, DOE is specifying the equivalent incandescent wattages. For the third criterion, because these lamps provide a better sleep-wake cycle by removing blue light, DOE has specified that the lamp must decrease or remove emission in the 440 to 490 nm wavelength range. In verifying a luminaire to have a certain amount of blue light content, the Underwriters Laboratories' verification method consisted of determining the amount of blue light radiation in the 440–490 nm wavelength range.<sup>24</sup> The fourth criterion

<sup>23</sup> Soraa HEALTHY™, available at <https://www.soraa.com/products/52-Soraa-Healthy-A19-A60.php#>; NorbSLEEP, available at <https://norblighting.com/sleep/>; accessed June 29, 2020.

<sup>24</sup> Ian Ashdown, Melanopic Green The Other Side of Blue, available at <https://www.ies.org/fires/melanopic-green-the-other-side-of-blue/>. Accessed

limits how many lamps are sold per package to ensure that lamps are not sold in bulk. This type of lamp offers a specific feature to consumers. To prevent the use of the lamp in general applications for common use, and thereby create a loophole to GSL standards, DOE is proposing the fourth criterion, which is consistent with the vibration service lamp definition intended for a specialty lamp type.

DOE requests comments on the proposed definition for “Circadian-friendly integrated LED lamp,” including the packaging criterion. DOE also requests comments on the consumer utility and efficacy potential of lamps marketed to improve the sleep-wake cycle. See section IX.E for a list of issues on which DOE seeks comment.

### C. *GSLs Evaluated for Potential Standards in This NOPR*

DOE is not assessing standards for general service OLED lamps and incandescent lamps, types of GSLs, in this NOPR analysis. OLED means a thin-film light-emitting device that typically consists of a series of organic layers between 2 electrical contacts (electrodes). 10 CFR 430.2. OLEDs can create diffuse light sources with direct emitters and are also thin and bendable, allowing for new form factors. DOE reviewed product offerings of manufacturers and retailers marketing OLED lighting technology and did not find any that offered integrated or non-integrated OLED lamps. Most OLED light sources are embedded within a light panel that can range from approximately 100 to 300 lumens.<sup>25</sup> The panels are being used in light fixtures such as desk lamps, hanging ceiling light fixtures and troffers emitting lumens ranging from 75 to 1,800 lumens (depending on the number of panels used per fixture). Due to the lack of commercially available GSLs that use OLED technology, it is unclear whether the efficacy of these products can be increased. Therefore, DOE is not evaluating standards for general service OLED lamps because DOE has tentatively determined that standards for these lamps would not be technologically feasible at this time.

As noted in section II.B.1 of this document, in the May 2022 Backstop Final Rule, DOE codified the 45 lm/W requirement for GSLs, which cannot be met by incandescent and halogen lamps.

Therefore, DOE is also not analyzing standards for incandescent and halogen lamps in this proposal.

DOE is analyzing CFLs and general service LED lamps that have a lumen output within the range of 310–3,300 lumens; an input voltage of 12 volts or 24 volts, at or between 100 to 130 volts, at or between 220 to 240 volts, or of 277 volts for integrated lamps, or are able to operate at any voltage for non-integrated lamps; and do not fall into any exclusion from the GSL definition at 10 CFR 430.2 (see section IV.A of this document).

### V. Scope of Metrics

In this section DOE discusses its proposal to use minimum lumens per watt as the metric for measuring lamp efficiency. DOE also discusses proposed updates to existing metrics and proposed addition of new metrics for GSLs.

Because CFLs are included in the definition of GSL, this proposed rulemaking satisfies the requirements under 42 U.S.C 6295(m)(1) to review existing standards for MBCFLs. The Energy Policy Act of 2005 (EPA 2005) amended EPCA by establishing energy conservation standards for MBCFLs, which were codified by DOE in an October 2005 final rule. 70 FR 60413. Performance requirements were specified for five metrics: (1) minimum initial efficacy; (2) lumen maintenance at 1,000 hours; (3) lumen maintenance at 40 percent of lifetime; (4) rapid cycle stress; and (5) lamp life. (42 U.S.C. 6295(bb)(1)) In addition to revising the existing requirements for MBCFLs, DOE has the authority to establish requirements for additional metrics including color rendering index (CRI), power factor, operating frequency, and maximum allowable start time based on the requirements prescribed by the August 9, 2001 ENERGY STAR<sup>®</sup> Program Requirements for CFLs Version 2.0, or establish other requirements after considering energy savings, cost effectiveness, and consumer satisfaction. (42 U.S.C. 6295(bb)(2)–(3))

For MBCFLs, in this NOPR, DOE is proposing to update the existing requirements for rapid cycle stress test and lifetime and add minimum requirements for power factor, CRI, and start time. For integrated LED lamps, DOE is also proposing to add a minimum requirement for power factor and for medium screw base GSLs a minimum requirement for CRI. These proposals are discussed in the following sections.

#### 1. Lumens per Watt (Lamp Efficacy)

As stated in section II.A, this proposed rulemaking is being conducted under 42 U.S.C. 6295(i)(6)(B). Under 42 U.S.C. 6295(i)(6)(B)(i)(I), DOE is required to determine whether standards in effect for GSILs should be amended to reflect lumen ranges with more stringent maximum wattage than the standards specified in paragraph (1)(A) [*i.e.*, standards enacted by section 321(a)(3)(A)(ii) of EISA<sup>26</sup>]. The scope of this analysis is not limited to incandescent lamp technologies and thus encompasses GSLs. The May 2022 Backstop Final Rule codified the statutory backstop requirement in 42 U.S.C. 6295(i)(6)(A)(v) prohibiting sales of GSLs that do not meet a 45 lm/W efficacy standard. Because incandescent and halogen GSLs would not be able to meet the 45 lm/W requirement, they are not being considered in this analysis. Regarding the efficiency metric, DOE is assessing the efficiency of GSLs based on minimum lumens per watt (*i.e.*, lamp efficacy) rather than maximum wattage of a lamp. Because the lamps covered by the scope of this rulemaking span different lighting technologies, GSLs designed to satisfy the same applications are available in a variety of wattages. The primary utility provided by a lamp is lumen output, which can be achieved through a wide range of wattages depending on the lamp technology. DOE has tentatively determined that lamps providing equivalent lumen output, and therefore intended for the same applications, should be subject to the same minimum efficacy requirements. Thus, DOE is proposing to use lumens per watt as a metric to evaluate standards in this NOPR. DOE is also proposing an equation-based approach to establish ELs so that lamps that provide the same utility (*i.e.*, lumen output) are subject to the same standard. To ensure there would be no backsliding in violation of EPCA with this approach, DOE

<sup>26</sup> This provision was to be codified as an amendment to 42 U.S.C. 6295(i)(1)(A). But because of an apparent conflict with section 322(b) of EISA, which purported to “strick[e] paragraph (1)” of 6295(i) and replace it with a new paragraph (1), neither this provision nor other provisions of section 321(a)(3)(A)(ii) of EISA that were to be codified in 42 U.S.C. 6295(i)(1) were ever codified in the U.S. Code. Compare EISA 321(a)(3)(A)(ii), with 42 U.S.C. 6295(i)(1). It appears, however, that Congress’s intention in section 322(b) was to replace the existing paragraph (1), not paragraph (1) as amended in section 321(a)(3). Indeed, there is no reason to believe that Congress intended to strike these new standards for GSILs. DOE has thus issued regulations implementing these uncanceled provisions. See, e.g., 10 CFR 430.32(x) (implementing standards for GSILs, as set forth in section 321(a)(3)(A)(ii) of EISA).

June 29, 2020; Circadian ZircLight, Inc. UL Verification Mark, available at <https://verify.ul.com/verifications/117>.

<sup>25</sup> U.S. Department of Energy, 2019 Lighting R&D Opportunities, January 2020. Available at <https://www.energy.gov/sites/prod/files/2020/01/f70/ssl-rd-opportunities2-jan2020.pdf>.

converted the maximum wattage standards for GSILs in paragraph (1)(A) [*i.e.*, the EISA enacted standards for GSILs] and 10 CFR 430.32(x)(1) to be expressed in terms of lumens per watt. For each lumen output, DOE used the corresponding maximum wattage to calculate the equivalent lumens-per-watt requirement and determined that the 45 lm/W sales prohibition for GSILs exceeds all maximum wattage requirements specified in paragraph (1)(A) and 10 CFR 430.32(x)(1). Thus, standards considered in this proposal that are in terms of lumens per watt would not decrease the existing minimum required energy efficiency of GSILs and do not result in backsliding.

## 2. Power Factor

In this NOPR DOE is proposing minimum power factor requirements for MBCFLs (see 42 U.S.C. 6295(bb)(2)–(3)) and integrated LED lamps. DOE considered ENERGY STAR Lamps Specification V2.1<sup>27</sup> requirements, industry standards, and characteristics of lamps in the current market when selecting power factor requirements for MBCFL and integrated LED lamps. DOE found the vast majority of the U.S. market reports power factors in the range of 0.5 to 0.6 for CFLs, which is consistent with ENERGY STAR Lamps Specification V2.1 (latest ENERGY STAR lamp specification) and ANSI C82.77–10–2020<sup>28</sup> requirement of a minimum power factor of 0.5 for integrated CFLs. Similarly, DOE found the vast majority of the U.S. market reports power factors greater than 0.7 for integrated LED lamps. DOE notes that ENERGY STAR Lamps Specification V2.1 requires a power factor of 0.6 for omnidirectional lamps with rated/reported input power of less than or equal to 10 watts and 0.7 for all other solid-state lamps. ANSI C82.77–10–2020 requires a minimum power factor of 0.57 for input powers between 5 W and 25 W (inclusive); and 0.86 for input powers greater than 25 W. DOE reviewed the lamps database developed for this analysis and determined that of integrated LED lamps with power factor data, 99.9 percent (about 16,700 lamps) had a power factor of 0.7 or greater. Further, of integrated LED lamps with wattage less than or equal to 10 W and

power factor data, 99.5 percent had a power factor 0.7 or greater. Therefore, because the vast majority of LED lamps have a power factor of 0.7 or greater, DOE is proposing a minimum 0.7 power factor for integrated LED lamps.

DOE also conducted testing of low-cost LED products that have been increasing in popularity on the market to determine if there was a relationship between cost and power factor. In an assessment conducted in 2016, DOE tested the power factor of 25 LED lamps with a per-lamp cost of \$5 or less. Of the 25 lamp models tested, 14 lamps had a power factor of 0.7 or higher. Because greater than half of the lamp models complied with a power factor requirement of 0.7, DOE tentatively concluded that low power factor is not a requirement for a low-cost LED lamp. DOE also reviewed the DOE product database developed for this analysis and found 25 integrated LED lamps with a published power factor and price of \$5 or less. Of these 25 lamps, 21 lamps had a power factor of 0.7 or higher. Thus, DOE has tentatively determined the proposed power factor requirements are achievable and would not result in higher costs, nor pose physical challenges. DOE is proposing a minimum power factor for integrated lamps being analyzed for potential standards in this NOPR of 0.7 for integrated LED lamps and 0.5 for MBCFLs.

## 3. Lifetime

In this NOPR, DOE is proposing to update the minimum lifetime standard for MBCFLs pursuant to the authority under 42 U.S.C 6295(m)(1) to review existing MBCFL standards. Specifically, DOE is proposing to update the existing minimum 6,000-hour requirement to 10,000 hours. Based on a review of the market DOE has determined that the majority of MBCFLs on the market have lifetimes of at least 10,000 hours. Further, of the MBCFLs submitted to DOE in DOE's compliance certification database, about 94 percent have a lifetime of at least 10,000 hours.

## 4. Start Time

In this NOPR, DOE is proposing a minimum start time requirement for MBCFLs (see 42 U.S.C. 6295(bb)(2)–(3)). Specifically, DOE is proposing that an MBCFL with standby mode power must meet a one second start time requirement and an MBCFL without standby mode power must meet a 750 millisecond start time requirement.

This requirement aligns with the ENERGY STAR Lamps Specification V2.1, the latest ENERGY STAR specifications regarding lamps. In

ENERGY STAR Lamps Specification V2.1, the start time for connected MBCFLs is full illumination within one second of application of electrical power, and for non-connected MBCFLs it is within 750 milliseconds. ENERGY STAR defines a connected lamp as a lamp that “includes elements (hardware and software or firmware) or instructions required to enable communication in response to consumer-authorized energy or performance related commands.” Based on this description, a connected lamp would have standby mode power.

## 5. CRI

Section 321(a) of EISA established CRI requirements for lamps that are intended for a general service or general illumination application (whether incandescent or not); have a medium screw base or any other screw base not defined in ANSI C81.61–2006; are capable of being operated at a voltage at least partially within the range of 110 to 130 volts; and are manufactured or imported after December 31, 2011. For such lamps, section 321(a) of EISA specifies a minimum CRI of 80 for nonmodified spectrum lamps and 75 for modified spectrum lamps. Because MBCFLs meet these criteria, as they are GSILs and used in general service applications, have a medium screw base and a rated input voltage range of 115 to 130 volts (see definition of “medium base compact fluorescent lamp” at 10 CFR 430.2), they are subject to section 321(a) of EISA.

In this NOPR, DOE is proposing to codify the CRI requirements in section 321(a) of EISA. Specifically, DOE is proposing to specify that lamps with a medium screw base or any other screw base not defined in ANSI C81.61–2006; intended for a general service or general illumination application (whether incandescent or not); and capable of being operated at a voltage at least partially within the range of 110 to 130 volts, must have a minimum CRI of 80 (for non-modified spectrum lamps) and 75 (modified spectrum lamps). Because MBCFLs meet these specifications they would also be subject to the minimum CRI requirements in section 321(a) of EISA.

## 6. Summary of Metrics

Table V.1 summarizes the non-efficacy metrics proposed in this rulemaking (efficacy metrics are discussed in the engineering analysis; see section VI.C of this document). DOE has determined that these proposed new metrics for MBCFLs, integrated LED lamps, and medium base GSILs will provide consumers with increased

<sup>27</sup> ENERGY STAR Lamps Specification V2.1, ENERGY STAR Program Requirements for Lamps (Light Bulbs), January 2, 2017. Available at <https://www.energystar.gov/sites/default/files/ENERGY%20STAR%20Lamps%20V2.1%20Final%20Specification.pdf>.

<sup>28</sup> American National Standards Institute, ANSI C82.77–10–2020, “American National Standard for Lighting Equipment-Harmonic Emission Limits-Related Power Quality Requirements,” approved January 9, 2020.

energy savings and consumer satisfaction for those products capable of achieving the proposed standard level. DOE has existing test procedures for the metrics being proposed. (See section III.B for more information on

test procedures for GSLs.) Further, DOE has tentatively concluded that the new proposed metrics will not result in substantial testing burden, as many manufacturers already test their products according to these metrics.

DOE requests comments on the non-efficacy metrics proposed for GSLs. See section IX.E for a list of issues on which DOE seeks comment.

TABLE V.1—NON-EFFICACY METRICS FOR CERTAIN GSLs

Lamp type	Metric	Minimum standard considered
MBCFLs .....	Lumen maintenance at 1,000 hours .....	90 percent of initial lumen output at 1,000 hours.
	Lumen maintenance at 40 percent of lifetime * .....	80 percent of initial lumen output at 40 percent of lifetime.
	Rapid cycle stress .....	MBCFL with start time >100 ms: survive one cycle per hour of lifetime * or a maximum of 15,000 cycles. MBCFLs with a start time of ≤100 ms: survive one cycle per every two hours of lifetime.*
	Lifetime * .....	10,000 hours.
	Power factor .....	0.5.
	CRI .....	80.
	Start time .....	The time needed for a MBCFL to remain continuously illuminated must be within: (1) one second of application of electrical power for lamp with standby mode power. (2) 750 milliseconds of application of electrical power for lamp without standby mode power.
Integrated LED Lamps .....	Power factor .....	0.7.
Non-modified spectrum lamps with a medium screw base or any other screw base not defined in ANSI C81.61–2006; intended for a general service or general illumination application (whether incandescent or not); capable of being operated at a voltage at least partially within the range of 110 to 130 volts.	CRI .....	80.
Modified spectrum lamps with a medium screw base or any other screw base not defined in ANSI C81.61–2006; intended for a general service or general illumination application (whether incandescent or not); capable of being operated at a voltage at least partially within the range of 110 to 130 volts.	CRI .....	75.

\* Lifetime refers to lifetime of a CFLs as defined in 10 CFR 430.2.

**VI. Methodology and Discussion**

This section addresses the analyses DOE has performed for this rulemaking with regard to GSLs. Separate subsections address each component of DOE’s analyses.

DOE used several analytical tools to estimate the impact of the standards proposed in this document. The first tool is a spreadsheet that calculates the LCC savings and PBP of potential amended or new energy conservation standards. The NIA uses a second spreadsheet set that provides shipments projections and calculates NES and NPV of total consumer costs and savings expected to result from potential energy conservation standards. DOE uses the third spreadsheet tool, the Government Regulatory Impact Model (GRIM), to assess manufacturer impacts of potential standards. These three spreadsheet tools are available on the DOE website for this rulemaking: [https://www1.eere.energy.gov/buildings/appliance\\_standards/standards.aspx?productid=4](https://www1.eere.energy.gov/buildings/appliance_standards/standards.aspx?productid=4).

[www1.eere.energy.gov/buildings/appliance\\_standards/standards.aspx?productid=4](https://www1.eere.energy.gov/buildings/appliance_standards/standards.aspx?productid=4). Additionally, DOE used output from the latest version of the Energy Information Administration’s (EIA’s) *Annual Energy Outlook (AEO)*, a widely known energy projection for the United States, for the emissions and utility impact analyses.

In this NOPR, DOE anticipates compliance in the second half of 2028 and uses 2029 as the first full compliance year for purposes of conducting the analysis based on the requirement in 42 U.S.C. 6295(m)(4)(B) that DOE shall not require new standards for a product within 6 years of the compliance date of the previous standard. Since compliance with the statutory backstop requirement for GSLs commenced on July 25, 2022 a July 25, 2028 compliance date for any GSL standard would provide a 6-year spread between GSL compliance dates consistent with 42 U.S.C. 6295(m)(4)(B).

A compliance date of July 25, 2028, is also consistent with the timespan described in 42 U.S.C. 6295(i)(6)(B), which contemplates at least a 5-year time period between any GSL rule arising out of the first cycle of rulemaking under 42 U.S.C. 6295(i)(6)(A) and the effective date of a final rule for the second cycle of rulemaking under 42 U.S.C. 6295(i)(6)(B). However, per 42 U.S.C. 6295(i)(6)(B)(iv)(I)–(II), for this proposed rulemaking, the Secretary shall consider phased-in effective dates after considering the impact of any amendments on manufacturers (e.g., retiring, repurposing equipment, stranded investments, labor contracts, workers and raw materials) and the time needed to work with retailers/lighting designers to revise sales/marketing strategies. As is evident in this analysis, DOE is collecting information and evaluating the industry and market with respect to potential standards for GSLs.

DOE will be in a better position to determine whether phased-in effective dates are necessary once it receives comments from stakeholders on the potential standards for GSLs presented in this NOPR. DOE requests comments on whether or not phased-in effective dates are necessary for this rulemaking. See section IX.E for a list of issues on which DOE seeks comment.

#### A. Market and Technology Assessment

DOE develops information in the market and technology assessment that provides an overall picture of the market for the products concerned, including the purpose of the products, the industry structure, manufacturers, market characteristics, and technologies used in the products. This activity includes both quantitative and qualitative assessments, based primarily on publicly-available information. The subjects addressed in the market and technology assessment for this rulemaking include (1) a determination of the scope of the rulemaking and product classes, (2) manufacturers and industry structure, (3) existing efficiency programs, (4) shipments information, (5) market and industry trends; and (6) technologies or design options that could improve the energy efficiency of GSLs. The key findings of DOE's market assessment are summarized in the following sections. See chapter 3 of the NOPR TSD for further discussion of the market and technology assessment.

##### 1. Product Classes

DOE divides covered products into classes by: (a) the type of energy used; (b) the capacity of the product; or (c) other performance-related features that justify different standard levels, considering the consumer utility of the feature and other relevant factors. (42 U.S.C. 6295(q)) In evaluating product class setting factors, DOE considers their impact on both efficacy and consumer utility. In this analysis, DOE reviewed several factors including lamp component location, standby mode operation, base type, bulb shape, CRI, correlated color temperature (CCT), lumens, and length. In this NOPR, DOE proposes product class divisions based on lamp component location (*i.e.*, location of ballast/driver) and capability of operating in standby mode; directionality (*i.e.*, omnidirectional versus directional) and lamp length (*i.e.*, 45 inches or longer [“long”] or less than 45 inches [“short”] as product class setting factors. In the section below, DOE discusses its proposed product class setting factors. In chapter 3 of the NOPR TSD, DOE discusses features it

considered but determined to not be valid product class setting factors including lamp technology, lumen package, lamp cover, dimmability, base type, lamp spectrum, CRI and CCT. See chapter 3 of the NOPR TSD for further discussion.

##### a. Lamp Component Location

Lamp component location refers to the position of the ballast or driver. Integrated lamps have these components enclosed within the lamp, whereas non-integrated lamps have them external to the lamp. Due to the additional components and circuitry enclosed within it, an integrated lamp will have an inherent difference in efficacy compared to a lamp that utilizes external components. For consumers using an integrated lamp, there is also the utility of requiring replacement of one lamp unit rather than two separate components. In certain cases, integrated lamps are also generally more compact and thus can be used in applications with size constraints. For these reasons, DOE is proposing a product class based on lamp component location.

##### b. Standby Mode Operation

DOE observed that some integrated lamps have standby mode functionality and conducted an analysis to determine its impact on lamp efficacy. Because this functionality seems to be increasingly incorporated in LED lamps compared to CFLs, DOE focused on LED lamps. DOE conducted active mode and standby mode testing per DOE's integrated LED lamp test procedure (see appendix BB). These lamps were designed with varying communication methods, including Zigbee, Bluetooth, Wi-Fi, and radio frequency remote controls. Almost half of the lamps tested were operated using a central hub for communication between the end-user and the lamp itself. DOE's test results, as presented in appendix 5a of the NOPR TSD, indicate that the tested standby power generally varied between 0.2 W and 0.5 W. DOE finds that these results indicate that lamps with standby power have a non-negligible standby power consumption that will likely lower their efficacy, compared to lamps without standby power, all things being equal. Therefore, based on utility and impact on efficacy, DOE is proposing a product class division based on standby mode.

##### c. Directionality

In this analysis, DOE assessed whether directionality should be a product class setting factor—that is, whether a lamp designed to direct light should be subject to separate standards

from a lamp that is not. DOE compared pairs of integrated LED lamps from the same manufacturer with the same lumens, lifetime, range of CCT and CRI, except one was directional (*e.g.*, parabolic aluminized reflector [“PAR”]) and the other omnidirectional (*e.g.*, A-shape). DOE also ensured the pairs were of comparable size. For example, a PAR30 was compared with an A19—the numbers indicate the diameter in inches when divided by 8. DOE determined that in over 80 percent of cases, omnidirectional lamps had a higher efficacy. Additionally, by directing or not directing light, directional and omnidirectional each provide a unique consumer utility. DOE was unable to compare the efficacy impact from directionality for the non-integrated lamps due to difference in size. The non-integrated directional lamps are predominantly MR16 shape lamps and the non-integrated omnidirectional lamps are longer tube, pin base CFLs and their LED replacements, or linear LED lamps. However, based on the analysis of integrated lamps, DOE has tentatively concluded that lamps differing only in directionality, all other attributes held constant, will likely differ in lamp efficacy. Due to the impact of directionality on efficacy and consumer utility, DOE is proposing directionality as a product class setting factor in this analysis.

##### d. Lamp Length

Efficacy tends to increase with length. GSLs span a range of lengths. A-shape or reflector shape lamps typically have a maximum overall length (MOL) of about 1.8–7 inches. Pin base CFLs and their LED replacements typically have a MOL of about 3.7–23 inches. Linear LED lamps are 2-, 3-, 4- and 8-foot lamps. In general, of these lamps, regardless of whether compared to integrated or non-integrated lamps, DOE found a considerable jump in efficacy for the 4-foot (about 45 inches) linear T8 LED lamps. Further, because consumers must change a lamp fixture to substitute lamps of different geometries for one another, lamp length affects utility. Due to the impact of length on efficacy and utility, DOE is proposing lamp length as a product class setting factor—specifying the product class division between lamps of 45 inches or longer length (long) and less than 45 inches (short).

DOE did observe that 4-foot T5 and 8-foot T8 linear LED lamps were not reaching the same efficacies as 4-foot T8 linear LED lamps. DOE has tentatively concluded that this is not due to a technical constraint due to diameter but rather lack of product development of 4-

foot T5 and 8-foot T8 linear LED lamps. DOE requests comments and data on the impact of diameter on efficacy for linear LED lamps. Finally, DOE observed that pin base LED lamp replacements with 2G11 bases and lengths close to two feet are less efficacious than 2-foot linear

LED lamps. DOE requests comments on all attributes the same, how the efficacy of pin base LED lamp replacements and linear LED lamps compare. See section IX.E for a list of issues on which DOE seeks comment.

e. Product Class Summary

Table VI.1 shows the product classes DOE is proposing in this NOPR. DOE requests comments on the proposed product classes. See section IX.E for a list of issues on which DOE seeks comment.

TABLE VI.1—PROPOSED GSL PRODUCT CLASSES

Lamp type	Lamp component location	Directionality	Lamp length	Standby mode operation
GSLs	Integrated	Omnidirectional	Short (<45 inches)	Standby.
		Directional	Long (≥45 inches)	Non-Standby.
	Non-Integrated	Omnidirectional	All Lengths	Standby.
		Directional	Short (<45 inches)	Non-Standby.
			Long (≥45 inches).	N/A.
			All Lengths.	

2. Technology Options

In the technology assessment, DOE identifies technology options that are feasible means of improving lamp efficacy. This assessment provides the technical background and structure on which DOE bases its screening and engineering analyses. To develop a list of technology options, DOE reviewed

manufacturer catalogs, recent trade publications and technical journals, and consulted with technical experts.

In this NOPR, DOE identified 21 technology options that would be expected to improve GSL efficacy, as measured by the applicable DOE test procedure. The technology options are differentiated by those that improve the efficacy of CFLs versus those that

improve the efficacy of LED lamps. Table VI.2 provides a list of technology options being proposed in this NOPR. For further information on all technology options considered in this NOPR, see chapter 3 of the NOPR TSD. DOE requests comments on the proposed technology options. See section IX.E for a list of issues on which DOE seeks comment.

TABLE VI.2—GSL TECHNOLOGY OPTIONS

Lamp type	Name of technology option	Description
CFL	Highly Emissive Electrode Coatings.	Improved electrode coatings allow electrons to be more easily removed from electrodes, reducing lamp power and increasing overall efficacy.
	Higher Efficiency Lamp Fill Gas Composition.	Fill gas compositions improve cathode thermionic emission or increase mobility of ions and electrons in the lamp plasma.
	Higher Efficiency Phosphors ...	Use of higher efficiency phosphors to increase the conversion of ultraviolet (UV) light into visible light.
	Glass Coatings	Coatings on inside of bulb reflect UV radiation passing through the phosphor back onto the phosphor, allowing a greater portion of UV to be absorbed, and thereby emit more visible light.
	Multi-Photon Phosphors	Emitting more than one visible photon for each incident UV photon absorbed.
	Cold Spot Optimization	Improve cold spot design to maintain optimal temperature and improve light output.
	Improved Ballast Components	Use of higher-grade components to improve efficiency of integrated ballasts.
	Improved Ballast Circuit Design.	Better circuit design to improve efficiency of integrated ballasts.
	Higher Efficiency Reflector Coatings.	Alternative reflector coatings such as silver, with higher reflectivity to increase the amount of directed light.
	Change to LEDs	Replace CFL with LED technology.
LED	Efficient Down Converters	New wavelength conversion materials, such as novel phosphor composition and quantum dots, have the potential for creating warm-white LEDs with improved spectral efficiency, high color quality, and improved thermal stability.
	Improved Package Architectures.	Arrangements of color mixing and phosphor coating LEDs on the LED array that improve package efficacy.
	Improved Emitter Materials	The development of efficient red, green, or amber LED emitters that allow for optimization of spectral efficiency with high color quality over a range of CCT and which also exhibit color and efficiency stability with respect to operating temperature.
	Alternative Substrate Materials	Emerging alternative substrates that enable high-quality epitaxy for improved device quality and efficacy.
	Improved Thermal Interface Materials (TIMs).	TIMs enable high efficiency thermal transfer to reduce efficacy loss from rises in junction temperature and optimize for long-term reliability of the device.
	Improved LED Device Architectures.	Novel architectures for integrating LED chip(s) into a lamp, such as surface mount device and chip-on-board that improve efficacy.
	Optimized Heat Sink Design	Heat sink design to improve thermal conductivity and heat dissipation from the LED package, thus reducing efficacy loss from rises in junction temperature.
Active Thermal Management Systems.	Devices such as internal fans and vibrating membranes to improve thermal dissipation from the LED chip.	

TABLE VI.2—GSL TECHNOLOGY OPTIONS—Continued

Lamp type	Name of technology option	Description
	Improved Primary Optics .....	Enhancements to the primary optics of the LED package, such as surface etching, novel encapsulant formulations, and flip chip design that improve light extraction from the LED package and reduce losses due to light absorption at interfaces.
	Improved Secondary Optics ....	Reduce or eliminate optical losses from the lamp housing, diffusion, beam shaping, and other secondary optics to increase efficacy using mechanisms such as reflective coatings and improved diffusive coatings.
	Improved Driver Design .....	Novel and intelligent circuit design to increase driver efficiency.
	AC LEDs .....	LEDs that operate on AC voltage, eliminating the requirement for and efficiency losses from the driver.
	Reduced Current Density .....	Driving LED chips at lower currents while maintaining light output, and thereby reducing the efficiency losses associated with efficacy droop.

*B. Screening Analysis*

DOE uses the following five screening criteria to determine which technology options are suitable for further consideration in an energy conservation standards rulemaking:

(1) *Technological feasibility.*

Technologies that are not incorporated in commercial products or in working prototypes will not be considered further.

(2) *Practicability to manufacture, install, and service.* If it is determined that mass production and reliable installation and servicing of a technology in commercial products could not be achieved on the scale necessary to serve the relevant market at the time of the projected compliance date of the standard, then that technology will not be considered further.

(3) *Impacts on product utility or product availability.* If it is determined that a technology would have a significant adverse impact on the utility of the product for significant subgroups of consumers or would result in the unavailability of any covered product type with performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as products generally available in the United States at the time, it will not be considered further.

(4) *Adverse impacts on health or safety.* If it is determined that a technology would have significant adverse impacts on health or safety, it will not be considered further.

(5) *Unique-Pathway Proprietary Technologies.* If a design option utilizes proprietary technology that represents a unique pathway to achieving a given efficiency level, that technology will not be considered further due to the potential for monopolistic concerns. 10 CFR part 430, subpart C, appendix A, sections 6(b)(3) and 7(b).

In summary, if DOE determines that a technology, or a combination of

technologies, fails to meet one or more of the listed five criteria, it will be excluded from further consideration in the engineering analysis. The reasons for eliminating any technology are discussed in the following sections.

The subsequent sections include comments from interested parties pertinent to the screening criteria, DOE’s evaluation of each technology option against the screening analysis criteria, and whether DOE determined that a technology option should be excluded (screened out) based on the screening criteria.

1. Screened-Out Technologies

In this NOPR, DOE is proposing to screen out multi-photon phosphors for CFLs, and quantum dots and improved emitter materials for LED lamps based on the first criterion on technological feasibility. In its review of technologies for this analysis, DOE did not find evidence that multi-photon phosphors, quantum dots, or improved emitter materials are being used in commercially available products or prototypes.

In this NOPR, DOE is proposing to screen out AC LEDs based on the second and third criteria, respectively practicability to manufacture, install, and service and adverse impacts on product utility or product. The only commercially available AC LED lamps that DOE found were G-shapes between 330 and 360 lumens or candle shapes between 220 and 400 lumens. Therefore, it is unclear whether the technology could be made for a wide range of products on a commercial scale and in particular for those being considered in this document.

2. Remaining Technologies

Through a review of each technology, DOE tentatively concludes that all of the other identified technologies listed in section VI.A.2 of this document met all five screening criteria and are examined further as design options in this analysis. In summary, DOE did not

screen out the following technology options:

*CFL Design Options*

- Highly Emissive Electrode Coatings
- Higher Efficiency Lamp Fill Gas Composition
- Higher Efficiency Phosphors
- Glass Coatings
- Cold Spot Optimization
- Improved Ballast Components
- Improved Ballast Circuit Design
- Higher Efficiency Reflector Coatings
- Change to LEDs

*LED Design Options*

- Efficient Down Converters (with the exception of quantum dot technologies)
- Improved Package Architectures
- Alternative Substrate Materials
- Improved Thermal Interface Materials
- Improved LED Device Architectures
- Optimized Heat Sink Design
- Active Thermal Management Systems
- Improved Primary Optics
- Improved Secondary Optics
- Improved Driver Design
- Reduced Current Density

DOE has initially determined that these technology options are technologically feasible because they are being used or have previously been used in commercially-available products or working prototypes. DOE also finds that all of the remaining technology options meet the other screening criteria (*i.e.*, practicable to manufacture, install, and service and do not result in adverse impacts on consumer utility, product availability, health, or safety, unique-pathway proprietary technologies). For additional details, see chapter 4 of the NOPR TSD. DOE requests comments on the design options it has identified. See section IX.E for a list of issues on which DOE seeks comment.

*C. Engineering Analysis*

The purpose of the engineering analysis is to establish the relationship between the efficiency and cost of GSLs. There are two elements to consider in the engineering analysis; the selection of



efficiency levels to analyze (*i.e.*, the “efficiency analysis”) and the determination of product cost at each efficiency level (*i.e.*, the “cost analysis”). In determining the performance of higher-efficiency products, DOE considers technologies and design option combinations not eliminated by the screening analysis. For each product class, DOE estimates the baseline cost, as well as the incremental cost for the product at efficiency levels above the baseline. The output of the engineering analysis is a set of cost-efficiency “curves” that are used in downstream analyses (*i.e.*, the LCC and PBP analyses and the NIA).

### 1. Efficiency Analysis

DOE typically uses one of two approaches to develop energy efficiency levels for the engineering analysis: (1) relying on observed efficiency levels in the market (*i.e.*, the efficiency-level approach), or (2) determining the incremental efficiency improvements associated with incorporating specific design options to a baseline model (*i.e.*, the design-option approach). Using the efficiency-level approach, the efficiency levels established for the analysis are determined based on the market distribution of existing products (in other words, based on the range of efficiencies and efficiency level “clusters” that already exist on the market). Using the design option approach, the efficiency levels established for the analysis are determined through detailed engineering calculations and/or computer simulations of the efficiency improvements from implementing specific design options that have been identified in the technology assessment. DOE may also rely on a combination of these two approaches. For example, the efficiency-level approach (based on actual products on the market) may be extended using the design option approach to “gap fill” levels (to bridge large gaps between other identified efficiency levels) and/or to extrapolate to the max-tech level (particularly in cases where the max-tech level exceeds the maximum efficiency level currently available on the market).

In this NOPR, DOE relies on an efficiency-level approach. For GSLs, efficiency levels (ELs) are determined as lumens per watt which is also referred to as the lamp’s efficacy (*see* section V.1 of this document). DOE derives ELs in the engineering analysis and end-user prices in the cost analysis. DOE estimates the end-user price of GSLs directly because reverse-engineering a lamp is impractical as the lamps are not easily disassembled. By combining the

results of the engineering analysis and the cost analysis, DOE derives typical inputs for use in the LCC and NIA. Section VI.D discusses the cost analysis (*see* chapter 5 of the NOPR TSD for further details).

The engineering analysis is generally based on commercially available lamps that incorporate the design options identified in the technology assessment and screening analysis. (*See* chapters 3 and 4 of the NOPR TSD for further information on technology and design options.) The methodology consists of the following steps: (1) selecting representative product classes, (2) selecting baseline lamps, (3) identifying more efficacious substitutes, and (4) developing ELs by directly analyzing representative product classes and then scaling those ELs to non-representative product classes. The details of the engineering analysis are discussed in chapter 5 of the NOPR TSD. The following discussion summarizes the general steps of the engineering analysis:

**Representative product classes:** DOE first reviews covered lamps and the associated product classes. When a product has multiple product classes, DOE selects certain classes as “representative” and concentrates its analytical effort on these classes. DOE selects representative product classes primarily because of their high market volumes and/or distinct characteristics.

**Baseline lamps:** For each representative product class, DOE selects a baseline lamp as a reference point against which to measure changes resulting from energy conservation standards. The baseline model in each product class represents the characteristics of a product typical of that class (*e.g.*, wattage, lumen output, CCT, CRI, shape, and lifetime). Generally, a baseline model is one that just meets current energy conservation standards, or, if no standards are in place, the baseline is typically the most common or least efficient unit on the market.

**More efficacious substitutes:** DOE selects higher efficacy lamps as replacements for each of the baseline models considered. When selecting higher efficacy lamps, DOE considers only design options that meet the criteria outlined in the screening analysis (*see* section VI.B or chapter 4 of the NOPR TSD). DOE also seeks to maintain the baseline lamp’s characteristics, such as base type, CCT, and CRI among other specifications, for substitute lamps. To calculate efficacy, DOE uses the ANSI rated wattage of the lamp, or nominal wattage if the ANSI rated wattage is not available. For the

Non-integrated product classes, DOE pairs each lamp with an appropriate ballast because these lamps are a component of a system, and their performance is related to the ballast on which they operate.

**Efficiency levels (ELs):** After identifying the more efficacious substitutes for each baseline lamp, DOE develops ELs. DOE bases its analysis on three factors: (1) the design options associated with the specific lamps studied; (2) the ability of lamps across lumen packages to comply with the standard level of a given product class; and (3) the max-tech EL. DOE then scales the ELs of representative product classes to any classes not directly analyzed. As part of DOE’s analysis, the maximum available efficacy level is the most efficacious unit currently available on the market. DOE also defines a “max-tech” efficacy level to represent the maximum possible efficacy for a given product.

For engineering analysis, DOE developed a lamps database using data from manufacturer catalogs, ENERGY STAR Certified Light Bulbs database,<sup>29</sup> DOE’s compliance certification database,<sup>30</sup> and retailer websites. DOE used performance data of lamps from one of these sources in the following general order of priority: DOE’s compliance certification database, manufacturer catalog, ENERGY STAR database, and retailer websites. In addition, DOE reviewed applicable lamps in the CEC’s Appliance Efficiency Database.<sup>31</sup>

### 2. Representative Product Classes

In the case where a covered product has multiple product classes, DOE identifies and selects certain product classes as “representative” and concentrates its analytical effort on those classes. DOE chooses product classes as representative primarily because of their high market volumes and/or unique characteristics. DOE then scales its analytical findings for those representative product classes to other product classes that are not directly analyzed.

In this NOPR, DOE is proposing to establish eight product classes: (1)

<sup>29</sup> The most recent ENERGY STAR Certified Light Bulbs database can be found at <https://www.energystar.gov/productfinder/product/certified-light-bulbs/results>. Last accessed June 17, 2020.

<sup>30</sup> DOE’s compliance certification database can be found at [https://www.regulations.doe.gov/certification-data/#q=Product\\_Group\\_s%3A\\*](https://www.regulations.doe.gov/certification-data/#q=Product_Group_s%3A*). Last accessed by June 17, 2020.

<sup>31</sup> The most recent CEC Appliance Efficiency Database can be found at <https://www.energy.ca.gov/appliances/>. Last accessed June 17, 2020.

Integrated Omnidirectional Short Standby Mode, (2) Integrated Omnidirectional Short Non-standby Mode, (3) Integrated Directional Standby Mode, (4) Integrated Directional Non-standby Mode, (5) Integrated Omnidirectional Long, (6) Non-integrated Omnidirectional Short, (7) Non-integrated Omnidirectional Long, and (8) Non-integrated Directional. With the exception of the Non-integrated Omnidirectional Long product class and all the Standby Mode product classes, DOE directly analyzed all other proposed product classes.

DOE directly analyzed Directional and Omnidirectional product classes. The Directional product classes consist of reflector lamps and lamps with MRX and AR shapes. Reflector lamp is defined by DOE as a lamp that has an R, PAR, BPAR, BR, ER, MR, or similar bulb shape and is used to provide directional light. (See proposed updates to industry references in the reflector lamp definition in section IV.B) The Omnidirectional product classes consist of shapes designed to output light in a non-directional manner such as the A, B, BA, CA, F, G, T shapes. Because of the distinctive difference in design, the Directional and Omnidirectional product classes cannot be scaled from each other and were directly analyzed.

DOE also directly analyzed the Long (45 inches or longer) and Short (shorter than 45 inches) product classes. The lamps in the Short product classes are mainly the A, B, BA, CA, F, G, R, PAR, BPAR, BR, ER, MR shapes or configurations of short multiple tubes (e.g., pin base CFLs). The lamps in the Long product classes are linear single tubes (e.g., 4-foot T8 linear LED lamps). Because of the distinctive difference in shape and size, the Short and Long

product classes cannot be scaled from each other and were directly analyzed.

As noted in section VI.A.1.a of this document, integrated lamps contain all the components necessary for operation within the lamp, whereas non-integrated lamps have components such as a ballast or driver external to the lamp. Due to this distinction in design, DOE directly analyzed both the Integrated and Non-integrated product classes with the exception of the Non-integrated Omnidirectional Long product class.

In this analysis, DOE scales the Non-integrated Omnidirectional Long product class from the Integrated Omnidirectional Long product class. There are three main types of linear LED lamps and LED lamps that are replacements for pin base CFLs: (1) Type A lamps have an internal driver and connect to the existing fluorescent lamp ballast; (2) Type B lamps have an internal driver and connect to the main line voltage; and (3) Type C lamps connect to an external, remote driver. In this analysis, DOE considers Type A and Type C lamps as non-integrated lamps because they require an external component to operate, whereas Type B lamps are integrated lamps as they can be directly connected to the main line voltage. There are also hybrid lamps that are both Type A and B. DOE classifies these lamps as integrated as they can be operated without an external component. Hence, the Non-integrated Omnidirectional Long product class consists of Type A and Type C linear LED lamps and the Integrated Omnidirectional Long product class consists of Type B and Type A/B linear LED lamps. DOE determined that lamps in both these product classes are the same in shape and size, and tentatively concluded the

internal versus external components would not preclude them from being scaled from or to one another. Based on manufacturer feedback, Type B lamps are a more robust replacement solution, and the professional and consumer markets are moving away from the Type A and Type C replacements. Hence, DOE directly analyzed the Integrated Omnidirectional Long product class (containing Type B, A/B lamps) and scaled the resulting ELs to derive ELs for the Non-integrated Omnidirectional Long product class (containing Type A and C lamps).

Finally, DOE is also directly analyzing product classes without standby mode functionality and scaling to product classes that have this functionality. DOE observed only integrated lamps to have standby mode functionality. Because integrated lamps with standby functionality are fundamentally the same as lamps without standby functionality but with the addition of wireless communication components, DOE did not directly analyze the integrated product classes capable of operating in standby mode, but rather scaled from the integrated lamps without standby functionality. DOE chose to directly analyze lamps without standby mode as they remain representative of the majority of the market.

In summary, DOE directly analyzed the product classes shown in grey shading in Table VI.3 as representative in this NOPR. See chapter 5 of the NOPR TSD for further discussion. DOE requests comments on the representative product classes (i.e., product classes directly analyzed) identified for this analysis. See section IX.E for a list of issues on which DOE seeks comment.

TABLE VI.3—GENERAL SERVICE LAMPS REPRESENTATIVE PRODUCT CLASSES

Lamp type	Lumen package	Directionality	Lamp length	Standby mode operation
GSLs .....	Integrated .....	Omnidirectional .....	Short (<45 inches) .....	Standby.
		Directional (reflector lamps) ...	Long (≥45 inches) .....	Non-Standby.
	Non-Integrated .....	Omnidirectional .....	All Lengths .....	Standby.
		Directional (reflector lamps) ...	Short (<45 inches) .....	Non-Standby.
			Long (≥45 inches)	N/A.
			All Lengths.	

3. Baseline Lamps

Once DOE identifies representative product classes for analysis, it selects baseline lamps to analyze in each class. Typically, a baseline lamp is the most common, least efficacious lamp that meets existing energy conservation

standards. Specific lamp characteristics were used to characterize the most common lamps purchased by consumers (e.g., wattage, CCT, CRI, and lumen output). Because certain products within the scope of this rulemaking have existing standards, GSLs that fall

within the same product class as these lamps must meet the existing standard in order to prevent backsliding of current standards in violation of EPCA. (See 42 U.S.C. 6295(o)(1)) Specifically, the Integrated Omnidirectional Short product class consists of MBCFLs for

which there are existing DOE standards. The other product classes do not have existing DOE standards but are subject to the statutory backstop requirement of 45 lm/W. DOE requests comments on the baseline lamps selected for each representative product class (*i.e.*, Integrated Omnidirectional Short Non-standby Mode, Integrated Directional Non-standby Mode, Integrated Omnidirectional Long, Non-integrated

Omnidirectional Short, and Non-integrated Directional). See section IX.E for a list of issues on which DOE seeks comment.

a. Integrated Omnidirectional Short Product Class

The Integrated Omnidirectional Short product class consists of the A, B, BA, CA, F, G, T shapes as well as linear and U-shape tubular LED lamps (Type B, A/B) that are less than 45 inches (*e.g.*,

2-foot linear or U-shape, 3-foot linear LED lamps). Based on common characteristics of lamps in this product class, DOE identified the baseline lamp as a 15 W, 900-lumen (*i.e.*, 60 W equivalent) spiral CFL with lifetime of 10,000 hours, CRI of 82, and CCT of 2,700 K. The baseline lamp for the Integrated Omnidirectional Short product class identified in this analysis is specified in Table VI.4.

TABLE VI.4—BASELINE LAMPS FOR INTEGRATED OMNIDIRECTIONAL SHORT PRODUCT CLASS

Representative product class	Lamp shape	Base type	Lamp type	Nominal wattage (W)	Initial lumens (lm)	Rated efficacy (lm/W)	Lifetime (hr)	CCT (K)	CRI
Integrated Omnidirectional Short .....	Spiral	E26	CFL	15	900	60.0	10,000	2,700	82

b. Integrated Omnidirectional Long Product Class

The Integrated Omnidirectional Long product class consists of linear tubular LED lamps. These are Type B or Type

A/B lamps that contain an internal driver and can be connected directly to the main line voltage. Based on common characteristics of lamps in this product class, DOE identified a 15 W 4-foot T8 Linear LED lamp with a medium bipin

base, 1,800 lumens, lifetime of 50,000 hours, CRI of 80, and CCT of 4,000 K as the baseline lamp. The baseline lamp for the Integrated Omnidirectional Long product class identified in this analysis is specified in Table VI.5.

TABLE VI.5—BASELINE LAMPS FOR INTEGRATED OMNIDIRECTIONAL LONG PRODUCT CLASS

Representative product class	Lamp shape	Lamp length	Base type	Lamp type	Nominal wattage (W)	Initial lumens (lm)	Rated efficacy (lm/W)	Lifetime (hr)	CCT (K)	CRI
Integrated Omnidirectional Long .....	T8	4-Foot	Medium Bipin	LED	15	1,800	120.0	50,000	4,000	80

c. Integrated Directional Product Class

The Integrated Directional product class consists of reflector shape lamps. Based on common characteristics of

lamps in this product class, DOE identified a 23 W, PAR38 shape CFL with an E26 base, 1,100 lumens, lifetime of 10,000 hours, CRI of 82, and CCT of

2,700 K as the baseline lamp. The baseline lamp for the Integrated Directional product class identified in this analysis is specified in Table VI.6.

TABLE VI.6—BASELINE LAMPS FOR INTEGRATED DIRECTIONAL PRODUCT CLASS

Representative product class	Lamp shape	Base type	Lamp type	Nominal wattage (W)	Initial lumens (lm)	Rated efficacy (lm/W)	Lifetime (hr)	CCT (K)	CRI
Integrated directional .....	PAR38	E26	CFL	23	1,100	47.8	10,000	2,700	82

d. Non-Integrated Omnidirectional Short Product Class

The Non-integrated Omnidirectional Short product class mainly consists of pin base CFLs and their LED replacements as well as linear and U-shape tubular LED lamps (Type A, C) less than 45 inches (*e.g.*, 2-foot linear or

U-shape, and 3-foot linear LED lamps). DOE determined that base types of non-integrated lamps typically correspond to certain wattages and lumen outputs, and thus DOE concentrated on a common wattage and its associated base type. Based on a review of lamps that had the most common characteristics, DOE

identified the baseline lamp as a 26 W, 1,700-lumen double tube G24q-3 CFL with lifetime of 10,000 hours, CRI of 82, and CCT of 4,100 K.

The baseline lamp for the Non-integrated Omnidirectional Short product class identified in this analysis is specified in Table VI.7.

TABLE VI.7—BASELINE LAMPS FOR NON-INTEGRATED OMNIDIRECTIONAL SHORT PRODUCT CLASS

Product class	Base type	Lamp shape	Lamp type	Nominal wattage (W)	Initial lumens (lm)	Rated efficacy (lm/W)	Lifetime (hr)	CCT (K)	CRI
Non-Integrated Omnidirectional Short .....	G24q-3	Double Tube	CFL	26.0	1,700	65.4	10,000	4,100	82

e. Non-Integrated Directional Product Class  
 The Non-integrated Directional product class consists of reflector shape

lamps that mainly operate at 12 V. Based on common characteristics of lamps in this product class, DOE identified an 8 W MR16 shape LED with a GU5.3 base, 500 lumens, lifetime of

25,000 hours, CRI of 80, and CCT of 2,700 K as the baseline lamp. The baseline lamp for the Non-integrated Directional product class identified in this analysis is specified in Table VI.8.

TABLE VI.8—BASELINE LAMPS FOR NON-INTEGRATED DIRECTIONAL PRODUCT CLASS

Product class	Base type	Lamp shape	Lamp type	Nominal wattage (W)	Initial lumens (lm)	Rated efficacy (lm/W)	Lifetime (hr)	CCT (K)	CRI
Non-Integrated Directional .....	GU5.3	MR16	LED	8.0	500	62.5	25,000	2,700	80

4. More Efficacious Substitutes

DOE selects a series of more efficacious replacements for the baseline lamps considered within each representative product class. DOE considered only technologies that met all five criteria in the screening analysis. These selections were made such that the more efficacious substitute lamp saved energy and had light output within 10 percent of the baseline lamp’s light output, when possible. DOE also sought to keep characteristics of substitute lamps, such as CCT, CRI, and lifetime, as similar as possible to the baseline lamps. DOE selected more efficacious substitutes with the same base type as the baseline lamp since replacing an integrated lamp with a lamp of a different base type would potentially require a fixture or socket change and thus is considered an unlikely replacement. In identifying the more efficacious substitutes, DOE utilized the lamps database of commercially available GSLs it developed for this analysis (see section VI.C.1). Further details specific to the

more efficacious substitutes of the representative product classes are discussed in the following sections. DOE requests comments on the more efficacious substitutes selected for each representative product class (i.e., Integrated Omnidirectional Short Non-standby Mode, Integrated Directional Non-standby Mode, Integrated Omnidirectional Long, Non-integrated Omnidirectional Short, and Non-integrated Directional). See section IX.E for a list of issues on which DOE seeks comment.

a. Integrated Omnidirectional Short Product Class

For the Integrated Omnidirectional Short product class, DOE’s survey of the market showed the number of 15,000-hour LED lamps were comparable to 25,000-hour LED lamps. Additionally, ENERGY STAR Lamps Specification V2.1, effective January 2, 2017, requires LED lamps to have a lifetime of at least 15,000 hours. Hence, for the Integrated Omnidirectional Short product class, DOE analyzed more efficacious

substitutes with 25,000-hour lifetimes and 15,000-hour lifetimes at ELs where lamps with both lifetimes were available (i.e., EL 3, EL 4). DOE analyzed lamps with each lifetime as more efficacious substitutes because they are both readily available alternatives that are part of a growing market and have unique life-cycle costs and payback periods associated with them. For the Integrated Omnidirectional Short product class, DOE also ensured that the more efficacious substitutes were marketed as omnidirectional, thus maintaining the even light distribution of the baseline lamp.

As noted, the Integrated Omnidirectional Short product class consists of the A, B, BA, CA, F, G, T shapes as well as linear and U-shape tubular LED lamps (Type B, A/B) that are less than 45 inches (e.g., 2-foot linear and U-shape, 3-foot linear LED lamps). The more efficacious substitutes analyzed in this NOPR for the representative Integrated Omnidirectional Short product class are summarized in Table VI.9.

TABLE VI.9—REPRESENTATIVE LAMP UNITS IN THE INTEGRATED OMNIDIRECTIONAL SHORT PRODUCT CLASS

Product class	EL	Lifetime (hr)	Lamp shape	Base type	Lamp type	Nominal wattage (W)	Initial lumens (lm)	Rated efficacy (lm/W)	A-value *	CCT (K)	CRI
Integrated Omnidirectional Short.	Baseline	10,000	Spiral .....	E26 .....	CFL .....	15.0	900	60.0	– 40.0	2,700	82
	EL 1 .....	10,000	Spiral .....	E26 .....	CFL .....	14.0	900	64.3	– 35.7	2,700	82
	EL 2 .....	10,000	Spiral .....	E26 .....	CFL .....	13.0	900	69.2	– 30.8	2,700	83
	EL 3 .....	15,000	A19 .....	E26 .....	LED .....	10.0	800	80.0	– 18.5	2,700	80
	EL 4 .....	25,000	A19 .....	E26 .....	LED .....	10.0	800	80.0	– 18.5	2,700	84
		15,000	A19 .....	E26 .....	LED .....	9.0	800	88.9	– 9.6	2,700	80
	EL 5 .....	25,000	A19 .....	E26 .....	LED .....	9.0	800	88.9	– 9.6	2,700	80
		15,000	A19 .....	E26 .....	LED .....	8.0	800	100.0	1.5	2,700	81
	EL 6 .....	15,000	A19 .....	E26 .....	LED .....	7.0	800	114.3	15.8	2,700	82
	EL 7 .....	15,000	A19 .....	E26 .....	LED .....	6.5	810	124.6	25.9	2,700	80

\*The A-value is a variable in the equation form (a curve) being proposed to specify the minimum efficacy standard for GSLs. The A-value specifies the height of the equation form and thereby indicates the level of efficacy (see section VI.C.5.a).

b. Integrated Omnidirectional Long Product Class

The Integrated Omnidirectional Long product class consists of linear tubular LED lamps 45 inches or longer that are Type B or Type A/B. DOE identified more efficacious substitutes that save energy, have light output within 10

percent of baseline lamp, and have characteristics similar to the baseline lamp. The more efficacious substitutes analyzed in this analysis for the representative Integrated Omnidirectional Long product class are summarized in Table VI.10. DOE requests comments on whether any

characteristics (e.g., diameter [T5, T8]) may prevent or allow a linear LED lamp to achieve high efficacies. See section IX.E for a list of issues on which DOE seeks comment.

TABLE VI.10—REPRESENTATIVE LAMP UNITS IN THE INTEGRATED OMNIDIRECTIONAL LONG PRODUCT CLASS

Product class	EI	Lifetime (hr)	Lamp shape	Base type	Lamp type	Nominal wattage (W)	Initial lumens (lm)	Rated efficacy (lm/W)	A-value	CCT (K)	CRI
Integrated Omnidirectional Long.	Baseline	50,000	T8 Linear	Medium Bipin.	LED ....	15.0	1,800	120.0	17.5	4,000	80
	EL 1 .....	50,000	T8 Linear	Medium Bipin.	LED ....	14.0	1,800	128.6	26.1	4,000	82
	EL 2 .....	50,000	T8 Linear	Medium Bipin.	LED ....	12.5	1,750	140.0	37.5	4,000	83
	EL 3 .....	50,000	T8 Linear	Medium Bipin.	LED ....	12.0	1,800	150.0	47.5	4,000	82
	EL 4 .....	50,000	T8 Linear	Medium Bipin.	LED ....	11.5	1,800	156.5	54.0	4,000	82
	EL 5 .....	50,000	T8 Linear	Medium Bipin.	LED ....	10.5	1,700	161.9	59.4	4,000	82
	EL 6 .....	50,000	T8 Linear	Medium Bipin.	LED ....	9.2	1,625	176.6	74.1	4,000	83

c. Integrated Directional Product Class

The Integrated Directional product class consists of reflector shapes. While the baseline lamp for the Integrated Directional product class is a CFL, the more efficacious substitutes are integrated LED lamps. Because there is

a considerable difference in lifetimes between CFL and LED technology, the more efficacious substitutes have lifetimes of 25,000 hours rather than the baseline 10,000 hours. The most common lifetime among the LED lamps in this product class is 25,000 hours. Aside from technology and lifetime, the

more efficacious substitutes have characteristics similar to the baseline lamp, have light output within 10 percent of the baseline lamp, and save energy. The more efficacious substitutes analyzed for the representative Integrated Directional product class are summarized in Table VI.11.

TABLE VI.11—REPRESENTATIVE LAMP UNITS IN THE INTEGRATED DIRECTIONAL PRODUCT CLASS

Product class	EL	Lifetime (hr)	Lamp shape	Base type	Lamp type	Nominal wattage (W)	Initial lumens (lm)	Rated efficacy (lm/W)	A-value	CCT (K)	CRI
Integrated Directional .....	Baseline	10,000	PAR38 ...	E26 .....	CFL .....	23.0	1,100	47.8	94.7	2,700	82
	EL 1 .....	25,000	PAR38 ...	E26 .....	LED ....	17.0	1,200	70.6	72.6	2,700	80
	EL 2 .....	25,000	PAR38 ...	E26 .....	LED ....	16.0	1,200	75.0	68.2	2,700	80
	EL 3 .....	25,000	PAR38 ...	E26 .....	LED ....	15.0	1,200	80.0	63.2	2,700	83
	EL 4 .....	25,000	PAR38 ...	E26 .....	LED ....	14.0	1,200	85.7	57.5	2,700	82
	EL 5 .....	25,000	PAR38 ...	E26 .....	LED ....	12.5	1,200	96.0	47.2	2,700	83

d. Non-Integrated Omnidirectional Short Product Class

The Non-integrated Omnidirectional Short product class mainly consists of pin base CFLs and their LED replacements as well as linear and U-shape tubular LED lamps (Type A, C) less than 45 inches (e.g., 2-foot linear and U-shape, 3-foot linear LED lamps). For non-integrated GSLs that operate on a ballast, DOE considered more efficacious lamps that did not increase energy consumption relative to the baseline and had light output approximately within 10 percent of the baseline lamp-and-ballast system when possible. Due to potential physical and electrical constraints associated with switching base types, DOE selected substitute lamps that had the same base type as the baseline lamp. DOE paired each representative lamp with an appropriate ballast because non-integrated GSLs are a component of a system, and their performance is related to the ballast on which they operate.

LED Lamp Replacements for Non-Integrated CFLs

DOE conducted a thorough analysis of the LED replacements for non-integrated CFLs and found varied product offerings of efficacies, lumens, wattages, and bases. DOE also found that a little more than half of LED replacements include ballast compatibility lists. DOE was able to identify more efficacious non-integrated LED lamp substitutes for the 26 W non-integrated CFL baseline lamp. DOE notes that while these non-integrated LED lamps are marketed as replacements for the 26 W non-integrated CFL, they have much lower lumens than the CFL they are intended to replace. Hence, the more efficacious non-integrated LED lamps selected have lumens about 30–35 percent lower than the 26 W non-integrated CFL baseline lumens of 1,700. DOE confirmed with several manufacturers’ product support that these lamps are indeed equivalent replacements for the 26 W CFLs. DOE learned that because these LED lamps are designed to emit light in one direction, they emit fewer lumens than their CFL counterparts which are

designed to emit light in all directions (i.e., omnidirectional). Therefore, in a fixture the 26 W CFL and its equivalent LED lamp emit similar lumen outputs, as some of the CFL omnidirectional light is lost within the fixture.

The more efficacious non-integrated LED substitutes identified have a PL shape, a G24q base, 4,000K CCT, and 50,000-hour lifetime. These characteristics differ from the baseline 26 W CFL which has a double tube shape, a G24q–3 base, 4,100K CCT, and 10,000-hour lifetime (see section VI.C.3.d). Regarding shape, DOE found that most LED replacement lamps for non-integrated CFLs are marketed as having a PL shape which denotes plug-in or PLL shape which denotes a plug-in that is a longer lamp. The more efficacious non-integrated LED substitutes identified have a PL shape. The double tube shape of the CFL comprises of two tubes each bent in a U-shape, set side by side, while the PL shape of the LED is a singular tube with no bends. However, due to similar overall diameter and length, the PL shape lamp can serve as a suitable

replacement for the double tube shape lamp. Regarding base type, DOE determined that non-integrated LED lamp replacements for non-integrated CFLs do not include a number identification at the end of the base type, *i.e.* they are labeled as G24q rather than G24q-3. This is because the “-#” identification number correlates to the CFL wattage. Non-integrated LED replacements can be compatible with multiple CFL wattages and therefore, the “-#” is not required. Additionally, a non-integrated LED lamp with a G24q base can adequately replace G24q-1, G24q-2, G24q-3 bases of a non-integrated CFL. DOE confirmed that at the highest levels of efficacy, the vast majority of base types were available and thus consumers would not be forced to change base types in most scenarios. Consumers may need to change a base type if that base type is paired with a lamp that does not have a high efficacy. However, because the vast majority of base types do meet the highest ELs, this scenario would not be very common. Further, for the few, uncommon base types that are typically paired with less efficacious lamps and are not meeting the highest ELs, the base type should not pose a technological limitation for increasing lamp efficacy.

Regarding the difference in CCT, very few non-integrated LED replacements for non-integrated CFLs have a CCT of 4,100K. Therefore, DOE chose more efficacious non-integrated LED lamps with a 4,000K CCT, which is the most

popular CCT closest to 4,100K. Regarding lifetime, there is a considerable difference in lifetimes between CFL and LED technology, and almost all non-integrated LED replacements for non-integrated CFLs have a lifetime of 50,000 hours. DOE also confirmed that there is an even split of non-integrated LED lamp replacements for non-integrated CFLs that operate in the horizontal, vertical or universal orientation. DOE ensured that there were both horizontal and vertical orientation options at each proposed EL.

**Ballast Luminous Efficiency**

DOE compiled catalog data of non-integrated CFL ballasts in order to estimate the system power ratings and initial lumen outputs of the representative lamp-and-ballast systems in the Non-integrated product class. A lamp-and-ballast system input power depends on the total lamp arc power operated by the ballast and the ballast’s efficiency, or BLE. Because BLE specifications were not commonly listed in ballast catalogs, DOE instead used catalog ballast efficacy factor (BEF) data to convert to BLE for ballasts paired with full wattage lamps. DOE then determined an estimated BLE for ballasts paired with reduced wattage lamps, because ballast specifications when operating reduced wattage lamps are not published. DOE used BLE instead of BEF because the market has been shifting towards the BLE metric due to the fluorescent lamp ballast (FLB) final rule published on November

14, 2011 (76 FR 70548), and a simple, accurate method for converting BEF to BLE existed. (See chapter 5 of the NOPR TSD for more information on the determination of BLE and system input power.) The more efficacious non-integrated LED lamps identified in this analysis are Type A LEDs that can be used with the existing CFL ballast. Hence, DOE used the same ballast parameters for the non-integrated CFL and LED lamp units.

**Same-Wattage Substitute**

DOE identified more efficacious CFLs that were lower wattage than the baseline but produced similar light and were therefore more efficacious. DOE also identified substitute CFLs that were the same wattage as the baseline but produced more light and were therefore more efficacious. The difference in lumens between full-wattage EL 1 representative unit and the same-wattage baseline unit is 100 lumens, which is small. Thereby, the more efficacious, full wattage substitute at EL 1 is close in efficacy to the baseline. However, the more efficacious substitutes identified are likely replacement options for consumers in specific applications where light output must remain constant and thus a reduced wattage lamp with lower lumen output could not be used.

The more efficacious substitutes for the Non-integrated Omnidirectional Short product class are summarized in Table VI.12.

**TABLE VI.12—REPRESENTATIVE LAMP UNITS IN THE NON-INTEGRATED OMNIDIRECTIONAL SHORT PRODUCT CLASS**

Product class	EL	Lifetime (hr)	Lamp shape	Base type	Lamp type	Nominal wattage (W)	Initial lumens (lm)	Rated efficacy (lm/W)	A-value	CCT (K)	CRI
Non-integrated Omnidirectional Short.	Baseline	10,000	Double Tube.	G24q-3 ..	CFL .....	26.0	1,700	65.4	155.3	4,100	82
	EL 1 .....	10,000	Double Tube.	G24q-3 ..	CFL .....	26.0	1,800	69.2	151.8	4,100	82
		16,000	Double Tube.	G24q-3 ..	CFL .....	21.0	1,525	72.6	147.3	4,100	82
		50,000	PL .....	G24q .....	LED .....	12.0	1,100	91.7	123.4	4,000	80
	EL 3 .....	50,000	PL .....	G24q .....	LED .....	9.0	1,200	133.3	83.4	4,000	80

**e. Non-Integrated Directional Product Class**

As noted, the Non-integrated Directional product class consists of

reflector shapes that mainly operate at 12 V. DOE identified more efficacious substitutes that save energy, have light output within 10 percent of the baseline lamp, and have characteristics similar to

the baseline lamp. The more efficacious substitutes analyzed in this NOPR for the representative Non-integrated Directional product class are summarized in Table VI.13.

**TABLE VI.13—REPRESENTATIVE LAMP UNITS IN THE NON-INTEGRATED DIRECTIONAL PRODUCT CLASS**

Product class	EL	Lifetime (hr)	Lamp shape	Base type	Lamp type	Nominal wattage (W)	Initial lumens (lm)	Rated efficacy (lm/W)	A-value	CCT (K)	CRI
Non-integrated Directional .....	Baseline	25,000	MR16 .....	GU5.3 .....	LED .....	8.0	500	62.5	73.9	2,700	80
	EL 1 .....	25,000	MR16 .....	GU5.3 .....	LED .....	7.0	500	71.4	65.0	2,700	82
	EL 2 .....	25,000	MR16 .....	GU5.3 .....	LED .....	6.5	500	76.9	59.5	2,700	83
	EL 3 .....	25,000	MR16 .....	GU5.3 .....	LED .....	6.0	500	83.3	53.1	2,700	84

5. Efficacy Levels

After identifying more efficacious substitutes for each of the baseline lamps, DOE developed ELs based on the consideration of several factors, including: (1) the design options associated with the specific lamps being studied (e.g., grades of phosphor for CFLs, improved package architecture for LED lamps); (2) the ability of lamps across the applicable lumen range to comply with the standard level of a given product class; and (3) the max-tech level. DOE requests comments on the ELs analyzed for each representative product class (i.e., Integrated Omnidirectional Short Non-standby Mode, Integrated Directional Non-

standby Mode, Integrated Omnidirectional Long, Non-integrated Omnidirectional Short, and Non-integrated Directional). See section IX.E for a list of issues on which DOE seeks comment.

a. Equation Form

In this NOPR, using the lamps database of commercially available GSLs it developed for this analysis (see section VI.C.1 of this document), DOE conducted regression analyses to identify the equation form that best fits the GSL data. DOE determined a sigmoid equation is the best fit equation form to capture the relationship between wattage and lumens across all ranges for GSLs. DOE ensured that the

equation forms employed in this analysis capture product performance at both the high and low end of the lumen range. The equation determines the minimum efficacy based on the measured lumen output of the lamp. The A-value in the equations is a value that can be changed to move the equation curve up or down and thereby change the minimum required efficacy. The constants of the equations were the same for the Integrated Omnidirectional Short and Integrated Omnidirectional Long product classes. The equations for each representative product class are shown in Table VI.14. These equations were scaled for the non-representative product classes (see section VI.C.6 of this document).

**Table VI.14 GSL Equations**

Representative Product Class	Equation*
Integrated Omnidirectional Short	$Efficacy = \frac{123}{1.2 + e^{-0.005(Lumens-200)}} + A$
Integrated Omnidirectional Long	$Efficacy = \frac{123}{1.2 + e^{-0.005(Lumens-200)}} + A$
Integrated Directional	$Efficacy = \frac{73}{0.5 + e^{-0.0021(Lumens+1000)}} - A$
Non-integrated Omnidirectional Short	$Efficacy = \frac{122}{0.55 + e^{-0.003(Lumens+250)}} - A$
Non-integrated Directional	$Efficacy = \frac{67}{0.45 + e^{-0.00176(Lumens+1310)}} - A$

\*Efficacy = minimum efficacy requirement, Lumens = measured lumen output, and A = an adjustment variable (the “A-value”).

b. Integrated Omnidirectional Short Product Classes

In this NOPR, DOE identified seven ELs for the Integrated Omnidirectional Short product class. The baseline represents a basic CFL with an efficacy representative of the most common least efficacious product on the market. EL 1 represents an improved CFL with more-efficient phosphors and improved ballast components. EL 2 represents an advanced CFL with more-efficient phosphors, improved ballast components, and higher efficiency coatings. EL 3 represents an improved LED lamp with improved package architecture and high-efficiency driver design. EL 4 represents a more improved LED lamp with improved package architecture, high-efficiency driver design, and improved optics. EL 5 represents an advanced LED lamp with improved package architecture, high-efficiency driver design, improved optics, and reduced current density. EL

6 represents a more advanced LED lamp with improved package architecture, high-efficiency driver design, improved optics, reduced current density, and improved heat sink/thermal management. EL 7 represents the maximum technologically feasible LED lamp with improved package architecture, high-efficiency driver design, improved optics, reduced current density, improved heat sink/thermal management, and improved alternative substrate materials.

To establish final minimum efficacy requirements for each EL, DOE evaluated whether any adjustments were necessary to the initial ELs to ensure lamps were available across the entire lumen range and maintained consumer utility. DOE confirmed that a range of lamp characteristics such as lumens, CCT, and CRI would be available at the highest levels of efficacy. Because the Integrated Omnidirectional Short product class consists of MBCFLs which have existing

standards, DOE assessed whether the initial ELs are equal to or more stringent to the existing standards (i.e., that backsliding is not occurring). DOE determined that for products with lumens less than 424, the initial EL 1 equation would result in an efficacy requirement less than the 45 lm/W MBCFL standard. Similarly, for products with lumens less than 371, the initial EL 2 equation would result in an efficacy requirement less than the 45 lm/W MBCFL standard. Hence, DOE is proposing at EL 1 and EL 2 products with respectively, lumens less than 424 and lumens less than 371 must meet a minimum efficacy requirement of 45 lm/W. Regarding other lumen ranges, DOE is proposing at EL 1 products with lumens equal to 424 and less than or equal 3,300 meet the minimum efficacy requirement based on the equation line of EL 1; and at EL 2 products with lumens equal to 371 and less than or equal to 3,300 lumens meet the

minimum efficacy requirement based on the equation line of EL 2.

#### c. Integrated Omnidirectional Long Product Class

In this NOPR, DOE identified six ELs for the Integrated Omnidirectional Long product class. The baseline represents a basic LED with an efficacy representative of the most common least efficacious product on the market. EL 1 represents an improved LED lamp with improved package architecture. EL 2 represents a more improved LED lamp with improved package architecture and high-efficiency driver design. EL 3 represents an advanced LED lamp with improved package architecture, high-efficiency driver design, and improved optics. EL 4 represents an advanced LED lamp with improved package architecture, high-efficiency driver design, improved optics, and reduced current density. EL 5 represents a more advanced LED lamp with improved package architecture, high-efficiency driver design, improved optics, reduced current density, and improved heat sink/thermal management. EL 6 represents the maximum technologically feasible LED lamp with improved package architecture, high-efficiency driver design, improved optics, reduced current density, improved heat sink/thermal management, and improved alternative substrate materials.

To establish final minimum efficacy requirements for each EL, DOE evaluated whether any adjustments were necessary to the initial ELs to ensure lamps were available across the entire lumen range and maintained consumer utility. DOE confirmed that a range of lamp characteristics such as lumens, CCT, and CRI would be available at the highest levels of efficacy. After reviewing these characteristics, DOE determined that an adjustment to the max tech level was necessary to allow for lamps with lower CCTs to meet the max tech levels. DOE recognizes that LED technology may be less efficacious at lower CCTs. Therefore, DOE decided to lower the max tech level by adjusting the A-value from 74.1 to 71.7, and thereby the minimum lm/W required at that EL.

#### d. Integrated Directional Product Class

In this NOPR, DOE identified five ELs for the Integrated Directional product class. The baseline represents a basic CFL with an efficacy representative of the most common least efficacious product on the market. EL 1 represents an improved LED lamp with improved package architecture and high-efficiency driver design. EL 2 represents a more

improved LED lamp with improved package architecture, high-efficiency driver design, and improved optics. EL 3 represents an advanced LED lamp with improved package architecture, high-efficiency driver design, improved optics, and reduced current density. EL 4 represents a more advanced LED lamp with improved package architecture, high-efficiency driver design, improved optics, reduced current density, and improved heat sink/thermal management. EL 5 represents the maximum technologically feasible with improved package architecture, high-efficiency driver design, improved optics, reduced current density, improved heat sink/thermal management, and improved alternative substrate materials.

To establish final minimum efficacy requirements for each EL, DOE evaluated whether any adjustments were necessary to the initial ELs to ensure lamps were available across the entire lumen range and maintained consumer utility. DOE confirmed that a range of lamp characteristics such as lumens, CCT, and CRI would be available at the highest levels of efficacy. Hence, DOE found no reason to make adjustments to the initial ELs developed in this NOPR.

#### e. Non-Integrated Omnidirectional Short Product Class

As previously noted, the Non-integrated Omnidirectional Short product class comprises products with a wide range of base types (*see* section VI.C.4.d of this document). DOE confirmed that at the highest levels of efficacy, the vast majority of base types were available and thus consumers would not be forced to change base types in most scenarios. For the few, uncommon base types that are typically paired with less efficacious lamps and are not meeting the highest ELs, the base type should not pose a technological limitation for increasing lamp efficacy.

In this NOPR, DOE identified three ELs for the Non-integrated Omnidirectional Short product class. The baseline represents a basic CFL with an efficacy representative of the most common least efficacious product on the market. EL 1 represents a full wattage, improved CFL with more-efficient phosphors and thus more light output and a more efficacious reduced wattage CFL that produces similar lumen output as the baseline unit. The full wattage representative lamp unit was used to set the minimum efficacy requirements of EL 1 because it represents the technologically feasible level that applied across all lumen packages within the product class. EL 2

represents an advanced LED lamp with improved package architecture, high-efficiency driver design, improved optics, and reduced current density. EL 3 represents the maximum technologically feasible level with improved package architecture, high-efficiency driver design, improved optics, reduced current density, improved heat sink/thermal management, and improved alternative substrate materials.

To establish final minimum efficacy requirements for each EL, DOE evaluated whether any adjustments were necessary to the initial ELs to ensure lamps were available across the entire lumen range and also maintained consumer utility. Specifically, DOE considered the impacts on lumen package, CCT, CRI, lamp shapes, and lamp bases. DOE found lamps with a range of lumens available at the highest levels of efficacy. DOE also confirmed that a range of lamp characteristics such as CCT, CRI, shape, and base would be available at the highest levels of efficacy. Hence, DOE found no reason to make adjustments to the initial ELs developed in this NOPR.

#### f. Non-Integrated Directional Product Class

In this NOPR, DOE identified three ELs for the Non-integrated Directional product class. The baseline represents a basic LED with an efficacy representative of the most common least efficacious product on the market. EL 1 represents an advanced LED lamp with improved package architecture, high-efficiency driver design, improved optics, and reduced current density. EL 2 represents a more advanced LED lamp with improved package architecture, high-efficiency driver design, improved optics, reduced current density, and improved heat sink/thermal management. EL 3 represents the maximum technologically feasible with improved package architecture, high-efficiency driver design, improved optics, reduced current density, improved heat sink/thermal management, and improved alternative substrate materials.

To establish final minimum efficacy requirements for each EL, DOE evaluated whether any adjustments were necessary to the initial ELs to ensure lamps were available across the entire lumen range and also maintained consumer utility. Specifically, DOE considered the impacts on lumen package, CCT, CRI, lamp shapes, and lamp bases. DOE found lamps with a range of lumens available at the highest levels of efficacy. DOE also confirmed that a range of lamp characteristics such



as CCT, CRI, shape, and base would be available at the highest levels of efficacy. Hence, DOE found no reason to make adjustments to the initial ELs developed in this NOPR.

6. Scaling to Other Product Classes

As noted previously, DOE analyzes the representative product classes directly. DOE then scales the levels developed for the representative product classes to determine levels for product classes not analyzed directly. In this NOPR, DOE scaled the Integrated Omnidirectional Short Standby product class from the Integrated Omnidirectional Short Non-Standby product class. DOE scaled the Integrated Directional Standby product class from the Integrated Directional Non-Standby product class. DOE scaled the Non-integrated Omnidirectional Long product class from Integrated Omnidirectional Long product class. The scaling for the non-representative product classes is discussed in the following sections. DOE requests comment on its approach to scaling non-representative product classes in this NOPR. See section IX.E for a list of issues on which DOE seeks comment.

a. Scaling of Integrated Standby Mode Product Classes

DOE did not observe standby mode functionality in lamps in the Non-integrated product classes or the Integrated Omnidirectional Long product class, and therefore is proposing standby mode product classes only for the Integrated Omnidirectional Short and Integrated Directional Standby Mode products. DOE requests comments on its tentative determination that lamps such as Type B or Type A/B linear LED lamps do not have standby mode functionality. See section IX.E for a list of issues on which DOE seeks comment.

Based on test data, DOE found that standby power consumption was 0.5 W or less for the vast majority of lamps available. (See appendix 5A of the NOPR TSD for more information on the test results.) Therefore, DOE assumed a typical wattage constant for standby mode power consumption of 0.5 W and added this wattage to the rated wattage

of the non-standby mode representative units to calculate the expected efficacy of lamps with the addition of standby mode functionality. DOE then used the expected efficacy of the lamps with the addition of standby mode functionality at each EL to calculate the corresponding A-value. DOE assumed the lumens for a lamp with the addition of standby mode functionality were the same as for the non-standby mode representative units.

DOE has tentatively determined that this is the most appropriate approach for establishing ELs for standby mode product classes. DOE test procedures to measure efficacy in active mode of integrated LED lamps, CFLs and GSLs include the measurement of any standby mode power a lamp may have (see respectively, appendix BB, appendix W, and appendix DD of 10 CFR part 430, subpart B). DOE is proposing a standard based on the integrated measure of active mode and standby mode efficiency. For GSLs with standby mode functionality, the energy efficiency standards proposed in this NOPR set an assumed power consumption attributable to standby mode. It is possible for a lamp with standby mode power consumption greater than the assumed value to comply with the applicable energy efficiency standard, but only if the decreased efficiency of standby mode was offset by an increased efficiency in active mode. This ability for manufacturers to trade off efficiency between active mode efficiency and standby mode efficiency is a function of integrating the efficiencies into a single standard and is consistent with EPCA. EPCA directs DOE to incorporate, if feasible, standby mode and active mode into a single standard. (42 U.S.C. 6295(gg)(3)(A)) The integration of efficacies of multiple modes into a single standard allows for this type of trade-off. The combined energy consumption of a GSL in active mode and standby mode must result in an efficiency that is equal to or less than the applicable standard.

b. Scaling of Non-Integrated Long Product Class

In this NOPR, DOE scaled the Non-integrated Omnidirectional Long

product class from the representative Integrated Omnidirectional Long product class. Both classes consist of linear and U-shape tubular LED lamps. The Non-integrated Omnidirectional Long product class consists of Type A and Type C lamps which require an external component to operate. The Integrated Omnidirectional Long product class consists of Type B or Type A/B lamps which can be directly connected to the main line voltage. DOE determined that because the lamps in these product classes are the same in shape and size, they could be scaled from or to one another.

Because the linear shapes are substantively more prevalent than the U-shape lamps, DOE identified linear tubular LED lamp pairs that had the same manufacturer, initial lumen output, length, CCT, lifetime, CRI range in the 80s and differed only in being integrated (Type B) or non-integrated (Type A). Using 13 lamp pairs identified, DOE determined an average 10.7 percent efficacy increase and applied it to the efficacy at each EL of the Integrated Omnidirectional Long product class to calculate the efficacies of ELs for the Non-integrated Omnidirectional Long product class. The scaled efficacies of the ELs were then used to calculate the corresponding A-values.

7. Summary of All Efficacy Levels

Table VI.15 displays the efficacy requirements for each level analyzed by product class. Note that the non-standby and standby Integrated Omnidirectional Short product classes EL 1 and EL 2 have different requirements for lower and higher lumens. This is to ensure that lamps in the Integrated Omnidirectional Short product classes already subject to an existing standard are not subject to a less stringent standard, i.e., that backsliding in violation of 42 U.S.C. 6295(o)(1) is not occurring (see section VI.C.5.b for further information). The representative product classes are shown in gray, and all others are scaled product classes.

TABLE VI.15—PROPOSED EFFICACY LEVELS OF GSLS

Representative product class	Efficacy level	Efficacy (lm/W)
Integrated Omnidirectional Short (Not Capable of Operating in Standby Mode) .....	EL 1	45 (for lumens less than 424) 123/(1.2+e <sup>-0.005*(Lumens - 200)</sup> ) - 35.7 (for lumens 424–3,300)
	EL 2	45 (for lumens less than 371) 123/(1.2+e <sup>-0.005*(Lumens - 200)</sup> ) - 30.8 (for lumens 371–3,300)
	EL 3	123/(1.2+e <sup>-0.005*(Lumens - 200)</sup> ) - 18.5

TABLE VI.15—PROPOSED EFFICACY LEVELS OF GSLs—Continued

Representative product class	Efficacy level	Efficacy (lm/W)
	EL 4	$123/(1.2+e^{-0.005*(\text{Lumens} - 200)}) - 9.6$
	EL 5	$123/(1.2+e^{-0.005*(\text{Lumens} - 200)}) + 1.5$
	EL 6	$123/(1.2+e^{-0.005*(\text{Lumens} - 200)}) + 15.8$
	EL 7	$123/(1.2+e^{-0.005*(\text{Lumens} - 200)}) + 25.9$
Integrated Omnidirectional Long (Not Capable of Operating in Standby Mode)	EL 1	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} + 26.1$
	EL 2	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} + 37.5$
	EL 3	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} + 47.5$
	EL 4	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} + 54.0$
	EL 5	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} + 59.4$
	EL 6	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} + 74.1$
Integrated Directional (Not Capable of Operating in Standby Mode)	EL 1	$73/(0.5+e^{(-0.0021*(\text{Lumens} + 1000)})} - 72.6$
	EL 2	$73/(0.5+e^{(-0.0021*(\text{Lumens} + 1000)})} - 68.2$
	EL 3	$73/(0.5+e^{(-0.0021*(\text{Lumens} + 1000)})} - 63.2$
	EL 4	$73/(0.5+e^{(-0.0021*(\text{Lumens} + 1000)})} - 57.5$
	EL 5	$73/(0.5+e^{(-0.0021*(\text{Lumens} + 1000)})} - 47.2$
Non-integrated Omnidirectional Short (Not Capable of Operating in Standby Mode)	EL 1	$122/(0.55+e^{(-0.003*(\text{Lumens} + 250)})} - 151.8$
	EL 2	$122/(0.55+e^{(-0.003*(\text{Lumens} + 250)})} - 123.4$
	EL 3	$122/(0.55+e^{(-0.003*(\text{Lumens} + 250)})} - 83.4$
Non-integrated Directional (Not Capable of Operating in Standby Mode)	EL 1	$67/(0.45+e^{(-0.00176*(\text{Lumens} + 1310)})} - 65.0$
	EL 2	$67/(0.45+e^{(-0.00176*(\text{Lumens} + 1310)})} - 59.5$
	EL 3	$67/(0.45+e^{(-0.00176*(\text{Lumens} + 1310)})} - 53.1$
Integrated Omnidirectional Short (Capable of Operating in Standby Mode)	EL 1	45 (for lumens less than 452) $123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} - 37.9$ (for lumens 452–3,300)
	EL 2	45 (for lumens less than 399) $123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} - 33.3$ (for lumens 399–3,300)
	EL 3	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} - 22.2$
	EL 4	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} - 14.2$
	EL 5	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} - 4.3$
	EL 6	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} + 8.2$
	EL 7	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} + 17.1$
Integrated Directional (Capable of Operating in Standby Mode)	EL 1	$73/(0.5+e^{(-0.0021*(\text{Lumens} + 1000)})} - 74.6$
	EL 2	$73/(0.5+e^{(-0.0021*(\text{Lumens} + 1000)})} - 70.5$
	EL 3	$73/(0.5+e^{(-0.0021*(\text{Lumens} + 1000)})} - 65.8$
	EL 4	$73/(0.5+e^{(-0.0021*(\text{Lumens} + 1000)})} - 60.4$
	EL 5	$73/(0.5+e^{(-0.0021*(\text{Lumens} + 1000)})} - 50.9$
Non-integrated Omnidirectional Long (Not Capable of Standby Mode)	EL 1	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} + 39.8$
	EL 2	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} + 52.4$
	EL 3	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} + 63.5$
	EL 4	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} + 70.7$
	EL 5	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} + 76.6$
	EL 6	$123/(1.2+e^{(-0.005*(\text{Lumens} - 200)})} + 93.0$

D. Cost Analysis

The cost analysis portion of the engineering analysis is conducted using one or a combination of cost approaches. The selection of cost approach depends on a suite of factors, including the availability and reliability of public information, characteristics of the regulated product, the availability and timeliness of purchasing the GSLs

on the market. The cost approaches are summarized as follows:

- *Physical teardowns:* Under this approach, DOE physically dismantles a commercially available product, component-by-component, to develop a detailed bill of materials for the product.
- *Catalog teardowns:* In lieu of physically deconstructing a product, DOE identifies each component using parts diagrams (available from manufacturer websites or appliance

repair websites, for example) to develop the bill of materials for the product.

- *Price surveys:* If neither a physical nor catalog teardown is feasible (for example, for tightly integrated products such as fluorescent lamps, which are infeasible to disassemble and for which parts diagrams are unavailable) or cost-prohibitive and otherwise impractical (e.g., large commercial boilers), DOE conducts price surveys using publicly available pricing data published on

major online retailer websites and/or by soliciting prices from distributors and other commercial channels.

In the present case, DOE conducted the analysis using the price survey approach. Typically, DOE develops manufacturing selling prices (MSPs) for covered products and applies markups to create end-user prices to use as inputs to the LCC analysis and NIA. Because GSLs are difficult to reverse-engineer (*i.e.*, not easily disassembled), DOE directly derives end-user prices for the lamps covered in this rulemaking. The end-user price refers to the product price a consumer pays before tax and installation. Because non-integrated CFLs operate with a ballast in practice, DOE also developed prices for ballasts that operate those lamps.

DOE reviewed and used publicly available retail prices to develop end-user prices for GSLs. In its review, DOE observed a range of end-user prices paid for a lamp, depending on the

distribution channel through which the lamp was purchased. DOE identified the following four main distribution channels: Small Consumer-Based Distributors (*i.e.*, internet retailers); Large Consumer-Based Distributors: (*i.e.*, home centers, mass merchants, and hardware stores); Electrical Distributors; and State Procurement.

In this NOPR, for each distribution channel, DOE calculated an aggregate price for the representative lamp unit at each EL using the average prices for the representative lamp unit and similar lamp models. Because the lamps included in the calculation were equivalent to the representative lamp unit in terms of performance and utility (*i.e.*, had similar wattage, CCT, shape, base type, CRI), DOE considered the pricing of these lamps to be representative of the technology of the EL. DOE developed average end-user prices for the representative lamp units sold in each of the four main

distribution channels analyzed. DOE then calculated an average weighted end-user price using estimated shipments through each distribution channel.

DOE used one set of shipment percentages reflecting commercial products for the Non-integrated Omnidirectional Short, Non-integrated Directional, and Integrated Omnidirectional Long product classes and another set of shipment percentages reflecting residential products for the Integrated Omnidirectional Short and Integrated Directional product classes. DOE grouped the Integrated Omnidirectional Long product class in the commercial product categories as these are mainly linear tubular LED lamps used as replacements for linear fluorescents in commercial spaces. Table VI.16 shows the shipment weightings used for each distribution channel.

TABLE VI.16—SHIPMENT WEIGHTINGS USED PER DISTRIBUTION CHANNEL

	Small consumer-based distributors (%)	Large consumer-based distributors (%)	Electrical distributors (%)	State procurement (%)
Residential (Integrated Omnidirectional Short and Integrated Directional) ....	20	70	5	5
Commercial (Non-Integrated Omnidirectional, Non-integrated Directional, Integrated Omnidirectional Long) .....	20	8	62	10

DOE also determined prices for CFL ballasts by comparing the blue book prices of CFL ballasts with comparable fluorescent lamp ballasts and developing a scaling factor to apply to the end-user prices of the fluorescent lamp ballasts developed for the final rule that was published on November 14, 2011. 76 FR 70548. See chapter 5 of the NOPR TSD for shipment percentages and ballast prices.

The end-user prices determined in this NOPR are detailed in chapter 5 of the NOPR TSD. These end-user prices are used to determine an MSP using a distribution chain markup. DOE developed an average distribution chain markup by examining the annual Securities and Exchange Commission (SEC) 10-K reports filed by publicly traded retail stores that sell GSLs. See section VI.J for further details. DOE requests comments on its methodology for determining end-user prices and the resulting prices. See section IX.E for a list of issues on which DOE seeks comment.

E. Energy Use Analysis

The purpose of the energy use analysis is to determine the annual

energy consumption of GSLs at different efficacies in representative U.S. single-family homes, multi-family residences, and commercial buildings, and to assess the energy savings potential of increased GSL efficacy. The energy use analysis estimates the range of energy use of GSLs in the field (*i.e.*, as they are actually used by consumers). The energy use analysis provides the basis for other analyses DOE performed, particularly assessments of the energy savings and the savings in consumer operating costs that could result from adoption of amended or new standards. To develop annual energy use estimates, DOE multiplied GSL input power by the number of hours of use (HOU) per year and a factor representing the impact of controls.

DOE analyzed energy use in the residential and commercial sectors separately but did not explicitly analyze GSLs installed in the industrial sector. This is because far fewer GSLs are installed in that sector compared to the commercial sector, and the average operating hours for GSLs in the two sectors were assumed to be approximately equal. In the energy use and subsequent analyses, DOE analyzed

these sectors together (using data specific to the commercial sector), and refers to the combined sector as the commercial sector.

1. Operating Hours

a. Residential Sector

To determine the average HOU of Integrated Omnidirectional Short GSLs in the residential sector, DOE collected data from a number of sources. Consistent with the approach taken in the December 2019 Final Determination, DOE used data from various regional field-metering studies of GSL operating hours conducted across the U.S. (84 FR 71626–71671) DOE determined the regional variation in average HOU using average HOU data from the regional metering studies, which are listed in the energy use chapter (chapter 6 of the NOPR TSD). Specifically, DOE determined the average HOU for each EIA 2015 Residential Energy Consumption Survey (RECS) reportable domain (*i.e.*, state, or group of states).<sup>32</sup>

<sup>32</sup> U.S. Department of Energy–Energy Information Administration. 2015 Residential Energy Consumption Survey (RECS). 2015. (Last accessed

For regions without HOU metered data, DOE used data from adjacent regions. DOE estimated the national weighted-average HOU of Integrated Omnidirectional Short GSLs in the residential sector to be 2.3 hours per day.

For lamps in the other GSL product classes, DOE estimated average HOU by scaling the average HOU from the Integrated Omnidirectional Short product class. Scaling factors were developed based on the distribution of room types that particular lamp types (e.g., reflector or linear) are typically installed in, and the associated HOU for those room types. Room-specific average HOU data came from NEEA's 2014 *Residential Building Stock Assessment Metering Study* (RBSAM)<sup>33</sup> and room distribution data by lamp type came from a 2010 KEMA report.<sup>34</sup> See chapter 6 of this NOPR TSD for more detail. DOE notes that this approach assumes that the ratio of average HOU for reflector or linear lamps to A-line lamps will be approximately the same across the United States, even if the average HOU varies by geographic location. DOE estimated the national weighted-average HOU of Integrated Directional and Non-integrated Directional GSLs to be 2.9 hours per day and Integrated Omnidirectional Long GSLs to be 2.1 hours per day in the residential sector.

DOE assumes that operating hours do not vary by light source technology. Although some metering studies have observed higher hours of operation for CFL GSLs compared to all GSLs—such as NMR Group, Inc.'s *Northeast Residential Lighting Hours-of-Use Study*<sup>35</sup> and the *Residential Lighting End-Use Consumption Study* (RLEUCS)<sup>36</sup>—DOE assumes that the

higher HOU found for CFL GSLs is based on those lamps disproportionately filling sockets with higher HOU at the time of the studies. This would not be the case during the analysis period, when CFL and LED GSLs were expected to fill all GSL sockets. DOE assumes that it is appropriate to apply the HOU estimate for all GSLs to CFLs and LEDs, as only CFLs and LEDs will be available during the analysis period, consistent with DOE's approach in the March 2016 NOPR. This assumption is equivalent to assuming no rebound in operating hours as a result of more efficacious technologies filling sockets currently filled by less efficacious technologies.

The operating hours of lamps in actual use are known to vary significantly based on the room type the lamp is located in; therefore, DOE estimated this variability by developing HOU distributions for each room type using data from NEEA's 2014 RBSAM, a metering study of 101 single-family houses in the Northwest. DOE assumed that the shape of the HOU distribution for a particular room type would be the same across the U.S., even if the average HOU for that room type varied by geographic location. To determine the distribution of GSLs by room type, DOE used data from NEEA's 2016–2017 RBSAM for single-family homes,<sup>37</sup> which included GSL room-distribution data for more than 700 single-family homes throughout the Northwest.

DOE requests comment on the data and methodology used to estimate operating hours for GSLs in the residential sector. See section IX.E for a list of issues on which DOE seeks comment.

## b. Commercial Sector

For each commercial building type presented in the *2015 U.S. Lighting Market Characterization* (LMC), DOE determined average HOU based on the fraction of installed lamps utilizing each of the light source technologies typically used in GSLs and the HOU for each of these light source technologies for Integrated Omnidirectional Short, Integrated Directional, Non-integrated Directional, and Non-integrated

Omnidirectional GSLs.<sup>38</sup> For Integrated Omnidirectional Long GSLs, DOE used the data from the 2015 LMC pertaining to linear fluorescent lamps. DOE estimated the national-average HOU for the commercial sector by mapping the LMC building types to the building types used in CBECs 2012,<sup>39</sup> and then weighting the building-specific HOU for GSLs by the relative floor space of each building type as reported in the 2015 LMC. The national weighted-average HOU for Integrated Omnidirectional Short, Integrated Directional, Non-integrated Directional, and Non-integrated Omnidirectional GSLs in the commercial sector were estimated at 11.5 hours per day. The national weighted-average HOU for Integrated Omnidirectional Long GSLs in the commercial sector were estimated at 8.1 hours per day.

To capture the variability in HOU for individual consumers in the commercial sector, DOE used data from NEEA's *2019 Commercial Building Stock Assessment* (CBSA).<sup>40</sup> Similar to the residential sector, DOE assumed that the shape of the HOU distribution from the CBSA was similar for the U.S. as a whole.

DOE requests comment on the data and methodology used to estimate operating hours for GSLs in the commercial sector. See section IX.E for a list of issues on which DOE seeks comment.

## 2. Input Power

The input power used in the energy use analysis is the input power presented in the engineering analysis (section VI.C.4 of this document) for the representative lamps considered in this proposed rulemaking.

## 3. Lighting Controls

For GSLs that operate with controls, DOE assumed an average energy reduction of 30 percent, which is based on a meta-analysis of field measurements of energy savings from commercial lighting controls by

<sup>38</sup> Navigant Consulting, Inc. *2015 U.S. Lighting Market Characterization*. 2017. U.S. Department of Energy: Washington, DC Report No. DOE/EE-1719. (Last accessed February 23, 2022.) <https://energy.gov/eere/ssl/downloads/2015-us-lighting-market-characterization>.

<sup>39</sup> U.S. Department of Energy—Energy Information Administration. *2012 Commercial Buildings Energy Consumption Survey (CBECS)*. 2012. (Last accessed February 1, 2022.) <https://www.eia.gov/consumption/commercial/data/2012/>.

<sup>40</sup> Cadmus Group. *Commercial Building Stock Assessment 4 (2019) Final Report*. 2020. Northwest Energy Efficiency Alliance: Seattle, WA. (Last accessed August 18, 2021.) <https://neea.org/resources/cbsa-4-2019-final-report>.

February 1, 2022.) <https://www.eia.gov/consumption/residential/data/2015/>.

<sup>33</sup> Ecotope Inc. *Residential Building Stock Assessment: Metering Study*. 2014. Northwest Energy Efficiency Alliance: Seattle, WA. Report No. E14–283. (Last accessed February 23, 2022.) <https://neea.org/data/residential-building-stock-assessment>.

<sup>34</sup> KEMA, Inc. *Final Evaluation Report: Upstream Lighting Program: Volume 2*. 2010. California Public Utilities Commission, Energy Division: Sacramento, CA. Report No. CPU0015.02. (Last accessed August 5, 2021.) [https://www.calmac.org/publications/FinalUpstreamLightingEvaluationReport\\_Vol2\\_CALMAC.pdf](https://www.calmac.org/publications/FinalUpstreamLightingEvaluationReport_Vol2_CALMAC.pdf).

<sup>35</sup> NMR Group, Inc. and DNV GL. *Northeast Residential Lighting Hours-of-Use Study*. 2014. Connecticut Energy Efficiency Board, Cape Light Compact, Massachusetts Energy Efficiency Advisory Council, National Grid Massachusetts, National Grid Rhode Island, New York State Energy Research and Development Authority. (Last accessed August 5, 2021.) <https://app.box.com/s/o1f3bbunib2av2wiblu1/1995940511/17399081887/1>.

<sup>36</sup> DNV KEMA Energy and Sustainability and Pacific Northwest National Laboratory. *Residential Lighting End-Use Consumption Study: Estimation*

*Framework and Baseline Estimates*. 2012. U.S. Department of Energy: Washington, DC (Last accessed February 23, 2022.) [https://www1.eere.energy.gov/buildings/publications/pdfs/ssl/2012\\_residential-lighting-study.pdf](https://www1.eere.energy.gov/buildings/publications/pdfs/ssl/2012_residential-lighting-study.pdf).

<sup>37</sup> Northwest Energy Efficiency Alliance. *Residential Building Stock Assessment II: Single-Family Homes Report: 2016–2017*. 2019. Northwest Energy Efficiency Alliance. (Last accessed August 16, 2021.) <https://neea.org/img/uploads/Residential-Building-Stock-Assessment-II-Single-Family-Homes-Report-2016-2017.pdf>.

Williams, et al.<sup>41</sup> Because field measurements of energy savings from controls in the residential sector are very limited, DOE assumed that controls would have the same impact as in the commercial sector.

For this NOPR, DOE assumed that the controls penetration of 9 percent reported in the 2015 LMC is representative of Integrated Omnidirectional Short GSLs. DOE estimated different controls penetrations for Integrated Omnidirectional Long and Integrated and Non-integrated Directional GSLs. The 2015 LMC reports a controls penetration of 0 percent for linear fluorescent lamps in the residential sector; therefore, DOE assumed that no residential Integrated Omnidirectional Long lamps are operated on controls. To estimate controls penetrations for Integrated Directional and Non-integrated Directional GSLs, DOE scaled the controls penetration for Integrated Omnidirectional Short GSLs based on the distribution of room types that reflector lamps are typically installed in relative to A-type GSLs, and the controls penetration by room type from a 2010 KEMA report.<sup>42</sup> Based on this analysis, DOE estimated the controls penetrations for Integrated Directional and Non-integrated Directional GSLs as 10 percent.

For this NOPR, DOE maintains its assumption in the March 2016 NOPR that the fraction of CFLs and LED lamps on controls is the same. By maintaining the same controls fraction for both technologies derived from estimates for all GSLs, DOE's estimates of energy savings may be slightly conservative compared to a scenario where fewer CFLs are on dimmers. Additionally, DOE's shipments model projects that only 2.4 percent of shipments in the Integrated Omnidirectional Short product class and 0.3 percent of shipments in the Integrated Directional product class will be CFLs by 2029, indicating that the control fraction for CFLs will not significantly impact the overall results of DOE's analysis.

In the reference scenario, DOE assumed the fraction of residential GSLs on external controls remain fixed throughout the analysis period at 9 percent for Integrated Omnidirectional

Short GSLs, 10 percent for Integrated Directional and Non-integrated Directional GSLs, and 0 percent for Integrated Omnidirectional Long GSLs. The national impact analysis does, however, assume an increasing fraction of residential LED GSLs that operate with controls in the form of smart lamps, as discussed in section VI.H.1.a of this document.

DOE assumed that building codes would drive an increase in floor space utilizing controls in the commercial sector in this NOPR, similar to its assumption in the March 2016 NOPR. By the assumed first full year of compliance (2029), DOE estimated 33.2 percent of commercial GSLs in all product classes will operate on controls.

DOE requests any relevant data and comment on the energy use analysis methodology. See section IX.E for a list of issues on which DOE seeks comment.

Chapter 6 of the NOPR TSD provides details on DOE's energy use analysis for GSLs.

#### F. Life-Cycle Cost and Payback Period Analysis

DOE conducted LCC and PBP analyses to evaluate the economic impacts on individual consumers of potential energy conservation standards for GSLs. The effect of new or amended energy conservation standards on individual consumers usually involves a reduction in operating cost and an increase in purchase cost. DOE used the following two metrics to measure consumer impacts:

- The LCC is the total consumer expense of an appliance or product over the life of that product, consisting of total installed cost (manufacturer selling price, distribution chain markups, sales tax, and installation costs) plus operating costs (expenses for energy use, maintenance, and repair). To compute the operating costs, DOE discounts future operating costs to the time of purchase and sums them over the lifetime of the product.
- The PBP is the estimated amount of time (in years) it takes consumers to recover the increased purchase cost (including installation) of a more-efficient product through lower operating costs. DOE calculates the PBP by dividing the change in purchase cost at higher efficiency levels by the change in annual operating cost for the year that amended or new standards are assumed to take effect.

For each considered standard level, DOE measures the change in LCC relative to the LCC in the no-new-standards case, which reflects the change in the estimated efficiency distribution of GSLs in the standards

case compared to the absence of new or amended energy conservation standards. In contrast, the PBP for a given efficiency level is measured relative to the baseline product.

For each considered efficiency level in each product class, DOE calculated the LCC and PBP for a nationally representative set of potential residential consumers and commercial customers. Separate calculations were conducted for the residential and commercial sectors. DOE developed consumer samples based on the 2015 RECS and the 2012 CBECS for the residential and commercial sectors, respectively. For each consumer in the sample, DOE determined the energy consumption of the lamp purchased and the appropriate electricity price. By developing consumer samples, the analysis captured the variability in energy consumption and energy prices associated with the use of GSLs.

DOE added sales tax, which varied by state, and installation cost (for the commercial sector) to the cost of the product developed in the product price determination to determine the total installed cost. Inputs to the calculation of operating expenses include annual energy consumption, energy prices and price projections, lamp lifetimes, and discount rates. DOE created distributions of values for lamp lifetimes, discount rates, and sales taxes, with probabilities attached to each value, to account for their uncertainty and variability.

For a GSL standard case (*i.e.*, case where a standard would be in place at a particular TSL), DOE measured the annualized LCC savings resulting from the estimated efficacy distribution under the considered standard relative to the estimated efficacy distribution in the no-new-standards case. The efficacy distributions include market trends that can result in some lamps with efficacies that exceed the minimum efficacy associated with the standard under consideration. In contrast, the PBP only considers the average time required to recover any increased first cost associated with a purchase at a particular EL relative to the baseline product.

The computer model DOE uses to calculate the LCC and PBP relies on a Monte Carlo simulation to incorporate uncertainty and variability into the analysis. The Monte Carlo simulations randomly sample input values from the probability distributions and consumer user samples. The model calculated the LCC and PBP for a sample of 10,000 consumers per simulation run. The analytical results include a distribution of 10,000 data points showing the range

<sup>41</sup> Williams, A., B. Atkinson, K. Garbesi, E. Page, and F. Rubinstein. Lighting Controls in Commercial Buildings. *LEUKOS*. 2012. 8(3): pp. 161–180.

<sup>42</sup> KEMA, Inc. *Final Evaluation Report: Upstream Lighting Program: Volume 2*. 2010. California Public Utilities Commission, Energy Division: Sacramento, CA. Report No. CPU0015.02. (Last accessed August 5, 2021.) [https://www.calmac.org/publications/FinalUpstreamLightingEvaluationReport\\_Vol2\\_CALMAC.pdf](https://www.calmac.org/publications/FinalUpstreamLightingEvaluationReport_Vol2_CALMAC.pdf).

of LCC savings. In performing an iteration of the Monte Carlo simulation for a given consumer, product efficiency is chosen based on its probability. By accounting for consumers who purchase more-efficient products in the no-new-standards case, DOE avoids overstating the potential benefits from increasing product efficiency.

DOE calculated the LCC and PBP for all consumers of GSLs as if each were to purchase a new product in the

expected first full year of required compliance with amended standards. As discussed in section VI of this document, since compliance with the statutory backstop requirement for GSLs commenced on July 25, 2022, DOE would set a 6-year compliance date of July 25, 2028 for consistency with requirements in 42 U.S.C. 6295(m)(4)(B) and 42 U.S.C. 6295(i)(6)(B)(iii). Therefore, because the compliance date would be in the second half of 2028, for

purposes of its analysis, DOE used 2029 as the first full year of compliance with any amended standards for GSLs.

Table VI.17 summarizes the approach and data DOE used to derive inputs to the LCC and PBP calculations. The subsections that follow provide further discussion. Details of the spreadsheet model, and of all the inputs to the LCC and PBP analyses, are contained in chapter 7 of the NOPR TSD and its appendices.

TABLE VI.17—SUMMARY OF INPUTS AND METHODS FOR THE LCC AND PBP ANALYSIS \*

Inputs	Source/method
Product Cost .....	Weighted-average end-user price determined in the product price determination. To project the price of the LED lamps in the first full year of compliance, DOE used a price-learning analysis.
Sales Tax .....	Derived 2029 population-weighted-average tax values for each state based on Census population projections and sales tax data from Sales Tax Clearinghouse.
Installation Costs .....	Used RSMMeans and U.S. Bureau of Labor Statistics data to estimate an installation cost of \$1.73 per installed GSL for the commercial sector.
Disposal Cost .....	Assumed 35 percent of commercial CFLs are disposed of at a cost of \$0.70 per CFL. Assumptions based on industry expert feedback and a Massachusetts Department of Environmental Protection mercury lamp recycling rate report.
Annual Energy Use .....	Derived in the energy use analysis. Varies by geographic location and room type in the residential sector and by building type in the commercial sector.
Energy Prices .....	Based on 2021 average and marginal electricity price data from the Edison Electric Institute. Electricity prices vary by season and U.S. region.
Energy Price Trends .....	Based on AEO 2022 price forecasts.
Product Lifetime .....	A Weibull survival function is used to provide the survival probability as a function of GSL age, based on the GSL's rated lifetime and sector-specific HOU. On-time cycle length effects are included for residential CFLs.
Residual Value .....	Represents the value of surviving lamps at the end of the LCC analysis period. DOE discounts the residual value to the start of the analysis period and calculates it based on the remaining lamp's lifetime and price at the end of the LCC analysis period.
Discount Rates .....	Approach involves identifying all possible debt or asset classes that might be used to purchase the considered appliances, or might be affected indirectly. Primary data source was the Federal Reserve Board's Survey of Consumer Finances.
Efficacy Distribution .....	Estimated by the market-share module of shipments model. See chapter 8 of the NOPR TSD for details.
First Full Year of Compliance .....	2029.

\* References for the data sources mentioned in this table are provided in the sections following the table or in chapter 7 of the NOPR TSD.

1. Product Cost

To calculate consumer product costs, DOE typically multiplies the manufacturer production costs (MPCs) developed in the engineering analysis by the markups along with sales taxes. For GSLs, the engineering analysis determined end-user prices directly; therefore, for the LCC analysis, the only adjustment was to add sales taxes, which were assigned to each household or building in the LCC sample based on its location. In the March 2016 NOPR, due to the high variability in LED lamp price by light output, DOE developed and analyzed lamp options across three additional lumen ranges (310–749 lm, 1050–1489 lm, and 1490–1999 lm) for the Integrated Low-Lumen product class. However, for this NOPR analysis DOE has not analyzed any of the representative product classes on a lumen range basis because DOE has found that the price variability for LED

lamps has lessened to such a degree that conducting the analysis by lumen range is unnecessary.

DOE also used a price-learning analysis to account for changes in LED lamp prices that are expected to occur between the time for which DOE has data for lamp prices (2020) and the assumed first full year of compliance of the rulemaking (2029). For details on the price-learning analysis, see section VI.G of this document.

2. Installation Cost

Installation cost includes labor, overhead, and any miscellaneous materials and parts needed to install the product. For this NOPR, DOE assumed an installation cost of \$1.73 per installed commercial GSL—based on an estimated lamp installation time of 5 minutes from RSMMeans<sup>43</sup> and hourly

<sup>43</sup> RSMMeans. *Facilities Maintenance & Repair Cost Data 2013*. 2012. RSMMeans: Kingston, MA.

wage data from the U.S. Bureau of Labor Statistics<sup>44</sup>—but zero installation cost for residential GSLs.

DOE requests comment on the installation cost assumptions used in its analyses. See section IX.E for a list of issues on which DOE seeks comment.

3. Annual Energy Consumption

For each sampled household or commercial building, DOE determined the energy consumption for a GSL at different efficiency levels using the approach described previously in section VI.E of this document.

4. Energy Prices

Because marginal electricity price more accurately captures the

<sup>44</sup> U.S. Department of Labor—Bureau of Labor Statistics. *Occupational Employment and Wages, May 2021: 49-9071 Maintenance and Repair Workers, General*. May 2021. (Last accessed April 13, 2022.) <https://www.bls.gov/oes/2021/may/oes499071.htm>.

incremental savings associated with a change in energy use from higher efficiency, it provides a better representation of incremental change in consumer costs than average electricity prices. To use marginal electricity prices, DOE generally applies average electricity prices for the energy use of the product purchased in the no-new-standards case, and marginal electricity prices for the incremental change in energy use associated with the other efficiency levels considered.

In this NOPR, DOE only used marginal electricity prices due to the calculated annual electricity cost for some regions and efficiency levels being negative when using average electricity prices for the energy use of the product purchased in the no-new-standards case. Negative costs can occur in instances where the marginal electricity cost for the region and the energy savings relative to the baseline for the given efficiency level are large enough that the incremental cost savings exceed the baseline cost.

DOE derived electricity prices in 2021 using data from EEI Typical Bills and Average Rates reports.<sup>45</sup> Based upon comprehensive, industry-wide surveys, this semi-annual report presents typical monthly electric bills and average kilowatt-hour costs to the customer as charged by investor-owned utilities. For the residential sector, DOE calculated electricity prices using the methodology described in Coughlin and Beraki (2018).<sup>46</sup> For the commercial sector, DOE calculated electricity prices using the methodology described in Coughlin and Beraki (2019).<sup>47</sup>

DOE's methodology allows electricity prices to vary by sector, region and season. In the analysis, variability in electricity prices is chosen to be consistent with the way the consumer economic and energy use characteristics are defined in the LCC analysis. DOE assigned seasonal marginal prices to each household in the LCC sample based on its location. DOE also assigned seasonal marginal prices to each commercial building in the LCC sample

based on its location and annual energy consumption.

For a detailed discussion of the development of electricity prices, see chapter 7 of the NOPR TSD.

To estimate electricity prices in future years, DOE multiplied the 2021 regional energy prices by a projection of annual change in national-average residential or commercial energy price from *AEO2022*, which has an end year of 2050.<sup>48</sup> For each consumer sampled, DOE applied the projection for the census division in which the consumer was located. To estimate price trends after 2050, DOE assumed that the regional prices would remain at the 2050 value.

DOE used the electricity price trends associated with the AEO Reference case, which is a business-as-usual estimate, given known market, demographic, and technological trends. DOE also included AEO High Economic Growth and AEO Low Economic Growth scenarios in the analysis. The high- and low-growth cases show the projected effects of alternative economic growth assumptions on energy prices.

## 5. Product Lifetime

In this NOPR, DOE considered the GSL lifetime to be the service lifetime (*i.e.*, the age at which the lamp is retired from service). For the representative lamps in this analysis, including GSLs not considered in the March 2016 NOPR, DOE used the reference (Renovation-Driven) lifetime scenario methodology from the March 2016 NOPR. This methodology uses Weibull survival models to calculate the probability of survival as a function of lamp age. In the analysis, DOE considered the lamp's rated lifetime (taken from the engineering analysis), sector- and product class-specific HOU distributions, typical renovation timelines, and effects of on-time cycle length, which DOE assumed only applied to residential CFL GSLs. DOE requests comment on the GSL service lifetime model used in its analyses. In particular, DOE seeks information about the rate of premature failures for LED lamps analyzed in this NOPR and whether this rate differs from that of comparable CFLs or general service fluorescent lamps. DOE also seeks feedback or data that would inform the modeling of Integrated Omnidirectional Long lamp lifetimes, which have a longer rated lifetime than LED lamps in the other analyzed product classes. *See*

section IX.E for a list of issues on which DOE seeks comment.

For a detailed discussion of the development of lamp lifetimes, see Appendix 7C of the NOPR TSD.

## 6. Residual Value

The residual value represents the remaining dollar value of surviving lamps at the end of the LCC analysis period (the lifetime of the shortest-lived GSL in each product class), discounted to the first full year of compliance. To account for the value of any lamps with remaining life to the consumer, the LCC model applies this residual value as a "credit" at the end of the LCC analysis period. Because DOE estimates that LED GSLs undergo price learning, the residual value of these lamps is calculated based on the lamp price at the end of the LCC analysis period.

## 7. Disposal Cost

Disposal cost is the cost a consumer pays to dispose of their retired GSLs. DOE assumed that 35 percent of CFLs are recycled (this fraction remains constant over the analysis period), and that the disposal cost is \$0.70 per lamp for commercial consumers. Disposal costs were not applied to residential consumers. Because LED lamps do not contain mercury, DOE assumes no disposal costs for LED lamps in both the residential and commercial sectors. DOE requests comment and relevant data on the disposal cost assumptions used in its analyses. *See* section IX.E for a list of issues on which DOE seeks comment.

## 8. Discount Rates

In the calculation of LCC, DOE applies discount rates appropriate to residential and commercial consumers to estimate the present value of future operating cost savings. The subsections below provide information on the derivation of the discount rates by sector. *See* chapter 7 of the NOPR TSD for further details on the development of discount rates.

### a. Residential

DOE estimated a distribution of residential discount rates for GSLs based on the opportunity cost of consumer funds. DOE applies weighted average discount rates calculated from consumer debt and asset data, rather than marginal or implicit discount rates.<sup>49</sup> The LCC analysis estimates net

<sup>49</sup>The implicit discount rate is inferred from a consumer purchase decision between two otherwise identical goods with different first cost and operating cost. It is the interest rate that equates the increment of first cost to the difference in net present value of lifetime operating cost,

<sup>45</sup> Edison Electric Institute. *Typical Bills and Average Rates Report*. 2021. Winter 2021, Summer 2021: Washington, DC.

<sup>46</sup> Coughlin, K. and B. Beraki. 2018. Residential Electricity Prices: A Review of Data Sources and Estimation Methods. Lawrence Berkeley National Lab. Berkeley, CA. Report No. LBNL-2001169. <https://ees.lbl.gov/publications/residential-electricity-prices-review>.

<sup>47</sup> Coughlin, K. and B. Beraki. 2019. Non-residential Electricity Prices: A Review of Data Sources and Estimation Methods. Lawrence Berkeley National Lab. Berkeley, CA. Report No. LBNL-2001203. <https://ees.lbl.gov/publications/non-residential-electricity-prices>.

<sup>48</sup> U.S. Energy Information Administration. *Annual Energy Outlook 2022*. 2022. Washington, DC (Last accessed April 13, 2022.) <https://www.eia.gov/outlooks/aeo/index.php>.

present value over the lifetime of the product, so the appropriate discount rate will reflect the general opportunity cost of household funds, taking this time scale into account. Given the long-time horizon modeled in the LCC analysis, the application of a marginal interest rate associated with an initial source of funds is inaccurate. Regardless of the method of purchase, consumers are expected to continue to rebalance their debt and asset holdings over the LCC analysis period, based on the restrictions consumers face in their debt payment requirements and the relative size of the interest rates available on debts and assets. DOE estimates the aggregate impact of this rebalancing using the historical distribution of debts and assets.

To establish residential discount rates for the LCC analysis, DOE identified all relevant household debt or asset classes in order to approximate a consumer's opportunity cost of funds related to appliance energy cost savings. It estimated the average percentage shares of the various types of debt and equity by household income group using data from the Federal Reserve Board's Survey of Consumer Finances (SCF).<sup>50</sup> Using the SCF and other sources, DOE developed a distribution of rates for each type of debt and asset by income group to represent the rates that may apply in the year in which amended standards would take effect. DOE assigned each sample household a specific discount rate drawn from one of

the distributions. The average rate across all types of household debt and equity and income groups, weighted by the shares of each type, is 4.3 percent.

b. Commercial

For commercial consumers, DOE used the cost of capital to estimate the present value of cash flows to be derived from a typical company project or investment. Most companies use both debt and equity capital to fund investments, so the cost of capital is the weighted-average cost to the firm of equity and debt financing. This corporate finance approach is referred to as the weighted-average cost of capital. DOE used currently available economic data in developing commercial discount rates, with Damadoran Online being the primary data source.<sup>51</sup> The average discount rate across the commercial building types is 6.6 percent.

9. Efficacy Distribution in the No-New-Standards Case

To accurately estimate the share of consumers that would be affected by a potential energy conservation standard at a particular TSL, DOE's LCC analysis considered the projected distribution (*i.e.*, market shares) of product efficacies that consumers purchase under the no-new-standards case and each of the standard cases (*i.e.*, the cases where a standard would be set at each TSL) in the assumed first full year of compliance.

To estimate the efficacy distribution in the first full year of compliance, DOE

used a consumer-choice model based on consumer sensitivity to lamp price, lifetime, energy savings, and mercury content, as measured in a market study, as well as on consumer preferences for lighting technology as revealed in historical shipments data. DOE also included consumer sensitivity to dimmability in the market-share model for non-linear lamps to capture the better dimming performance of LED lamps relative to CFLs. Dimmability was excluded as a parameter in the market-share model for linear lamps, because DOE assumed that this feature was equivalently available among lamp options in the consumer-choice model. Consumer-choice parameters were derived from consumer surveys of the residential sector. DOE was unable to obtain appropriate data to directly calibrate parameters for consumers in the commercial sector. Due to a lack of data to support an alternative set of parameters, DOE assumed the same parameters in the commercial sector. For further information on the derivation of the market efficiency distributions, see section VI.G of this document and chapter 8 of the NOPR TSD.

The estimated market shares for the no-new-standards case and each standards case are determined by the shipments analysis and are shown in Table VI.18 through Table VI.22 of this document. A description of each of the TSLs is located in section VII.A of this document.

TABLE VI.18—INTEGRATED OMNIDIRECTIONAL SHORT GSL MARKET EFFICACY DISTRIBUTION BY TRIAL STANDARD LEVEL IN 2029

Trial standard level	EL 0 (%)	EL 1 (%)	EL 2 (%)	EL 3* (%)	EL 4* (%)	EL 5 (%)	EL 6 (%)	EL 7 (%)	Total** (%)
<b>Residential</b>									
No-New-Standards .....	0.7	0.7	0.8	26.6	26.1	14.0	13.9	17.1	100.0
TSL 1 .....	0.0	0.0	0.8	27.0	26.4	14.2	14.1	17.4	100.0
TSL 2 .....	0.0	0.0	0.0	27.2	26.6	14.3	14.3	17.5	100.0
TSL 3 .....	0.0	0.0	0.0	0.0	0.0	31.1	30.9	38.0	100.0
TSL 4 .....	0.0	0.0	0.0	0.0	0.0	0.0	44.9	55.1	100.0
TSL 5 .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
TSL 6 .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
<b>Commercial</b>									
No-New-Standards .....	0.7	0.7	0.8	27.4	26.8	13.6	13.5	16.6	100.0
TSL 1 .....	0.0	0.0	0.8	27.8	27.2	13.8	13.7	16.8	100.0
TSL 2 .....	0.0	0.0	0.0	28.0	27.4	13.9	13.8	17.0	100.0
TSL 3 .....	0.0	0.0	0.0	0.0	0.0	31.1	30.9	38.0	100.0
TSL 4 .....	0.0	0.0	0.0	0.0	0.0	0.0	44.9	55.1	100.0
TSL 5 .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
TSL 6 .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0

\* This EL contains two representative lamp options.

incorporating the influence of several factors: transaction costs; risk premiums and response to uncertainty; time preferences; interest rates at which a consumer is able to borrow or lend. The implicit discount rate is not appropriate for the LCC analysis because it reflects a range of factors that influence consumer purchase decisions, rather than

the opportunity cost of the funds that are used in purchases.

<sup>50</sup> U.S. Board of Governors of the Federal Reserve System. *Survey of Consumer Finances*. 1995, 1998, 2001, 2004, 2007, 2010, 2013, 2016, and 2019. (Last accessed February 1, 2022.) [https://](https://www.federalreserve.gov/econresdata/scf/scfindex.htm)

[www.federalreserve.gov/econresdata/scf/scfindex.htm](https://www.federalreserve.gov/econresdata/scf/scfindex.htm).

<sup>51</sup> Damodaran, A. *Data Page: Historical Returns on Stocks, Bonds and Bills-United States*. 2021. (Last accessed April 26, 2022.) <https://pages.stern.nyu.edu/~adamodar/>.



\*\* The total may not sum to 100% due to rounding.

TABLE VI.19—INTEGRATED DIRECTIONAL GSL MARKET EFFICACY DISTRIBUTION BY TRIAL STANDARD LEVEL IN 2029

Trial standard level	EL 0 (%)	EL 1 (%)	EL 2 (%)	EL 3 (%)	EL 4 (%)	EL 5 (%)	Total* (%)
<b>Residential</b>							
No-New-Standards .....	0.34	12.3	14.7	17.4	21.1	34.2	100.0
TSL 1 .....	0.0	12.3	14.7	17.5	21.1	34.3	100.0
TSL 2 .....	0.0	0.0	0.0	24.0	29.0	47.0	100.0
TSL 3-6 .....	0.0	0.0	0.0	0.0	0.0	100.0	100.0
<b>Commercial</b>							
No-New-Standards .....	0.3	12.3	14.7	17.4	21.1	34.2	100.0
TSL 1 .....	0.0	12.3	14.7	17.5	21.1	34.3	100.0
TSL 2 .....	0.0	0.0	0.0	24.0	29.0	47.0	100.0
TSL 3-6 .....	0.0	0.0	0.0	0.0	0.0	100.0	100.0

\* The total may not sum to 100% due to rounding.

TABLE VI.20—NON-INTEGRATED DIRECTIONAL GSL MARKET EFFICACY DISTRIBUTION BY TRIAL STANDARD LEVEL IN 2029

Trial standard level	EL 0 (%)	EL 1 (%)	EL 2 (%)	EL 3 (%)	Total* (%)
<b>Residential</b>					
No-New-Standards .....	25.8	24.6	22.9	26.8	100.0
TSL 1-4 .....	0.0	33.1	30.8	36.1	100.0
TSL 5-6 .....	0.0	0.0	0.0	100.0	100.0
<b>Commercial</b>					
No-New-Standards .....	25.8	24.6	22.9	26.8	100.0
TSL 1-4 .....	0.0	33.1	30.8	36.1	100.0
TSL 5-6 .....	0.0	0.0	0.0	100.0	100.0

\* The total may not sum to 100% due to rounding.

TABLE VI.21—NON-INTEGRATED OMNIDIRECTIONAL GSL MARKET EFFICACY DISTRIBUTION BY TRIAL STANDARD LEVEL IN 2029

Trial standard level	EL 0 (%)	EL 1* (%)	EL 2 (%)	EL 3 (%)	Total** (%)
<b>Commercial</b>					
No-New-Standards .....	2.4	2.2	40.8	54.6	100.0
TSL 1 .....	0.0	2.3	41.8	56.0	100.0
TSL 2-6 .....	0.0	0.0	0.0	100.0	100.0

\* This EL contains two representative lamp options.

\*\* The total may not sum to 100% due to rounding.

TABLE VI.22—INTEGRATED OMNIDIRECTIONAL LONG GSL MARKET EFFICACY DISTRIBUTION BY TRIAL STANDARD LEVEL IN 2029

Trial standard level	EL 0 (%)	EL 1 (%)	EL 2 (%)	EL 3 (%)	EL 4 (%)	EL 5 (%)	EL 6 (%)	Total* (%)
<b>Residential</b>								
No-New-Standards .....	14.1	14.0	14.0	15.0	14.1	14.6	14.1	100.0
TSL 1 .....	0.0	16.3	16.3	17.5	16.5	17.0	16.4	100.0
TSL 2 .....	0.0	0.0	0.0	25.9	24.45	25.3	24.3	100.0
TSL 3-5 .....	0.0	0.0	0.0	0.0	0.0	51.01	49.0	100.0
TSL 6 .....	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
<b>Commercial</b>								
No-New-Standards .....	14.1	14.0	14.0	15.0	14.1	14.6	14.1	100.0
TSL 1 .....	0.0	16.3	16.3	17.5	16.5	17.0	16.4	100.0
TSL 2 .....	0.0	0.0	0.0	25.9	24.45	25.3	24.3	100.0
TSL 3-5 .....	0.0	0.0	0.0	0.0	0.0	51.0	49.0	100.0
TSL 6 .....	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0

\* The total may not sum to 100% due to rounding.

See chapter 7 of the NOPR TSD for further information on the derivation of the efficacy distributions.

#### 10. LCC Savings Calculation

In the reference scenario, DOE calculated the LCC savings at each TSL based on the change in average LCC for each standards case compared to the no-new-standards case, considering the efficacy distribution of products derived by the shipments analysis. This approach allows consumers to choose products that are more efficient than the standard level and is intended to more accurately reflect the impact of a potential standard on consumers.

DOE used the consumer-choice model in the shipments analysis to determine the fraction of consumers that purchase each lamp option under a standard, but the model is unable to track the purchasing decision for individual consumers in the LCC sample. However, DOE must track any difference in purchasing decision for each consumer in the sample in order to determine the fraction of consumers who experience a net cost. Therefore, DOE assumed that the rank order of consumers, in terms of the efficacy of the product they purchase, is the same in the no-new-standards case as in the standards cases. In other words, DOE assumed that the consumers who purchased the most-efficacious products in the no-new-standards case would continue to do so in standards cases, and similarly, those consumers who purchased the least efficacious products in the no-new-standards case would continue to do so in standards cases. This assumption is only relevant in determining the fraction of consumers who experience a net cost in the LCC savings calculation, and has no effect on the estimated national impact of a potential standard.

#### 11. Payback Period Analysis

The payback period is the amount of time it takes the consumer to recover the additional installed cost of more-efficient products, compared to baseline products, through energy cost savings. Payback periods are expressed in years. Payback periods that exceed the life of the product mean that the increased total installed cost is not recovered in reduced operating expenses.

The inputs to the PBP calculation for each efficiency level are the change in total installed cost of the product and the change in the first-year annual operating expenditures relative to the baseline. The PBP calculation uses the same inputs as the LCC analysis, except that discount rates are not needed.

As noted previously, EPCA establishes a rebuttable presumption

that a standard is economically justified if the Secretary finds that the additional cost to the consumer of purchasing a product complying with an energy conservation standard level will be less than three times the value of the first year's energy savings resulting from the standard, as calculated under the applicable test procedure. (42 U.S.C. 6295(o)(2)(B)(iii)) For each considered efficiency level, DOE determined the value of the first year's energy savings by calculating the energy savings in accordance with the applicable DOE test procedure, and multiplying those savings by the average energy price projection for the first full year in which compliance with the amended standards would be required.

DOE requests any relevant data and comment on the LCC and PBP analysis methodology. See section IX.E for a list of issues on which DOE seeks comment.

#### G. Shipments Analysis

DOE uses projections of annual product shipments to calculate the national impacts of potential amended or new energy conservation standards on energy use, NPV, and future manufacturer cash flows.<sup>52</sup> The shipments model takes an accounting approach, tracking market shares of each product class and the vintage of units in the stock. Stock accounting uses product shipments as inputs to estimate the age distribution of in-service product stocks for all years. The age distribution of in-service product stocks is a key input to calculations of both the NES and NPV, because operating costs for any year depend on the age distribution of the stock.

##### 1. Shipments Model

The shipments model projects shipments of GSLs over a thirty-year analysis period for the no-new-standards case and for all standards cases. Consistent with the May 2022 Backstop Final Rule, DOE developed a shipments model that implements the 45 lm/W minimum efficiency requirement for GSLs in 2022 in the no-new-standards case and all standards cases. Accurate modeling of GSL shipments also requires modeling, in the years prior to 2022, the demand and market shares of those lamps that are eliminated by the implementation of the 45 lm/W minimum efficiency requirement, as well as general service fluorescent lamps (GSFLs), because replacements of these lamps are a source of demand for in-scope products.

<sup>52</sup> DOE uses data on manufacturer shipments as a proxy for national sales, as aggregate data on sales are lacking. In general, one would expect a close correspondence between shipments and sales.

Separate shipments projections are calculated for the residential sector and for the commercial sector. The shipments model used to estimate GSL lamp shipments for this rulemaking has three main interacting elements: (1) a lamp demand module that estimates the demand for GSL lighting for each year of the analysis period; (2) a price-learning module that projects future prices based on historic price trends; and (3) a market-share module that assigns shipments to the available lamp options. DOE requests any relevant data and comment on the shipment analysis methodology. See section IX.E for a list of issues on which DOE seeks comment.

##### a. Lamp Demand Module

The lamp demand module first estimates the national demand for GSLs in each year. The demand calculation assumes that sector-specific lighting capacity (maximum lumen output of installed lamps) remains fixed per square foot of floor space over the analysis period, and total floor space changes over the analysis period according to the EIA's *AEO2022* projections of U.S. residential and commercial floor space.<sup>53</sup> For linear lamps, DOE assumed that there is no new demand from floorspace growth due to the increasing prevalence of integral LED luminaires in new commercial construction.

DOE requests data or feedback that might inform the assumption that linear lamps (regardless of technology type) are increasingly absent from new construction. See section IX.E for a list of issues on which DOE seeks comment.

A lamp turnover calculation estimates demand for new lamps in each year based on the growth of floor space in each year, the expected demand for replacement lamps, and sector-specific assumptions about the distribution of per-lamp lumen output desired by consumers. The demand for replacements is computed based on the historical shipments of lamps and the probability of lamp failure as a function of age. DOE used rated lamp lifetimes (in hours) and expected usage patterns in order to derive these probability distributions (see section VI.F.5 for further details on the derivation of lamp lifetime distributions).

The lamp demand module also accounts for the reduction in GSL demand due to the adoption of integral LED luminaires into lighting

<sup>53</sup> U.S. Department of Energy—Energy Information Administration. *Annual Energy Outlook 2022 with projections to 2050*. 2022. Washington, DC Report No. *AEO2022*. (Last accessed June 23, 2022.) [https://www.eia.gov/outlooks/aeo/pdf/AEO2022\\_Narrative.pdf](https://www.eia.gov/outlooks/aeo/pdf/AEO2022_Narrative.pdf).

applications traditionally served by GSLs, both prior to and during the analysis period. For non-linear lamps in each year, an increasing portion of demand capped at 15 percent is assumed to be met by integral LED luminaires modeled as a Bass diffusion curve<sup>54</sup> as in the March 2016 NOPR. For linear lamps, DOE assumes that 8.2 percent of stock is replaced in each year with integrated LED fixtures in order to account for retrofits and renovations, and that demand comes from replacement of failures in the remaining stock. This annual rate of stock replacement is based on a projection of commercial lighting stock composition through 2050 produced for AEO2022.<sup>55</sup>

DOE requests comment on the assumption that 15 percent of demand will be met by integral LED luminaires.

DOE requests input on the described method of accounting for demand lost to integral LED fixtures. In particular, DOE seeks information about the rate at which linear lamp stock is converted to integrated LED fixtures via retrofit or renovation. See section IX.E for a list of issues on which DOE seeks comment. Further details on the assumptions used to model these market transitions are presented in chapter 8 of the NOPR TSD.

For this NOPR, DOE assumed the implementation of a 45 lm/W minimum efficiency requirement for GSLs in 2022, consistent with the May 2022 Backstop Final Rule. DOE notes that CFL and LEDs make up 77 percent of A-line lamp sales in 2020 based on data collected from NEMA A-line lamp indices, indicating that the market has moved rapidly towards increasing production capacity for CFL and LED technologies.<sup>56</sup>

For the Integrated Omnidirectional Short product class, DOE developed separate shipments projections for A-line lamps and for non-A-line lamps (candelabra, intermediate and medium-screw base lamps including, B, BA, C, CA, F, G and T-shape lamps) in order to capture the different market drivers between the two types of lamps. Based on an analysis of online product offerings, DOE assumed that the prices of lamp options at each EL would be approximately the same for A-line and non-A-line Integrated Omnidirectional

Short lamps, but scaled the power consumption of non-A-line lamps to be representative of a 450 lumen lamp. Although modelled separately, results for A-line and non-A-line lamps are aggregated into the Integrated Omnidirectional Short product class throughout this NOPR analysis.

#### b. Price-Learning Module

The price-learning module estimates lamp prices in each year of the analysis period using a standard price-learning model,<sup>57</sup> which relates the price of a given technology to its cumulative production, as represented by total cumulative shipments. Cumulative shipments are determined for each GSL lighting technology under consideration in this analysis (CFL and LED) at the start of the analysis period and are augmented in each subsequent year of the analysis based on the shipments determined for the prior year. New prices for each lighting technology are calculated from the updated cumulative shipments according to the learning (or experience) curve for each technology. The current year's shipments, in turn, affect the subsequent year's prices. Because LED lamps are a relatively young technology, their cumulative shipments increase relatively rapidly and hence they undergo a substantial price decline during the shipments analysis period. For simplicity, shipments of Integrated Omnidirectional Long lamps were not included in the cumulative shipments total used to determine the price learning rate for LED GSLs, as shipments of those lamps would not contribute significantly to the total cumulative LED shipments or the resulting LED GSL learning rate, but Integrated Omnidirectional Long GSLs were assumed to experience the same rate of price decline as all LED GSLs. DOE assumed that CFLs and GSFLs undergo no price learning in the analysis period due to the long history of these lamps in the market.

#### c. Market-Share Module

The market-share module apportions the lamp shipments in each year among the different lamp options developed in the engineering analysis. DOE used a consumer-choice model based on consumer sensitivity to lamp price, lifetime, energy savings, and mercury content, as measured in a market study,

as well as on consumer preferences for lighting technology as revealed in historical shipments data. DOE also included consumer sensitivity to dimmability in the market-share model for non-linear lamps to capture the better dimming performance of LED lamps relative to CFLs. Dimmability was excluded as a parameter in the market-share model for linear lamps, because DOE assumed that this feature was equivalently available among lamp options in the consumer-choice model. GSFL substitute lamp options were included in the consumer-choice model for Integrated Omnidirectional Long lamps, as such GSFLs can serve as substitutes for linear LED lamps. Specifically, the 4-foot T8 lamp options described in the 2022 GSFL NOPD analysis (see 87 FR, 32338–32342) were included as lamp options to more accurately estimate the impact of any potential standard on costs and energy use in the broader linear lamp market.

The market-share module assumes that, when replacing a lamp, consumers will choose among all of the available lamp options. Substitution matrices were developed to specify the product choices available to consumers. The available options depend on the case under consideration; in each of the standards cases corresponding to the different TSLs, only those lamp options at or above the particular standard level, and relevant alternative lamps, are considered to be available. The market-share module also incorporates a limit on the diffusion of LED technology into the market using the widely accepted Bass adoption model,<sup>58</sup> the parameters of which are based on data on the market penetration of LED lamps published by NEMA,<sup>59</sup> as discussed previously. In this way, the module assigns market shares to available lamp options, based on observations of consumer preferences.

DOE also used a Bass adoption model to estimate the diffusion of LED lamp technologies into the non-integrated product class and requests feedback on its assumption that non-integrated LED lamp options became available starting in 2015. See section IX.E for a list of issues on which DOE seeks comment.

DOE requests relevant historical data on GSL shipments, disaggregated by product class and lamp technology, as they become available in order to improve the accuracy of the shipments analysis. See section IX.E for a list of issues on which DOE seeks comment.

<sup>54</sup> Bass, F.M. A New Product Growth Model for Consumer Durables. *Management Science*. 1969. 15(5): pp. 215–227.

<sup>55</sup> U.S. Department of Energy–Energy Information Administration. *Annual Energy Outlook 2022 with Projections to 2050*. Washington, DC Report No. AEO2022. (Last accessed June 23, 2022.) <https://www.eia.gov/outlooks/aeol/>.

<sup>56</sup> National Electrical Manufacturers Association. *Lamp Indices*. (Last accessed August 2nd, 2021.) <https://www.nema.org/analytics/lamp-indices>.

<sup>57</sup> Taylor, M. and S.K. Fujita. *Accounting for Technological Change in Regulatory Impact Analyses: The Learning Curve Technique*. 2013. Lawrence Berkeley National Laboratory: Berkeley, CA. Report No. LBNL–6195E. (Last accessed August 5, 2021) <https://eta.lbl.gov/publications/accounting-technological-change>.

<sup>58</sup> Bass, F.M. A New Product Growth Model for Consumer Durables. *Management Science*. 1969. 15(5): pp. 215–227.

H. National Impact Analysis

The NIA assesses the NES and the NPV from a national perspective of total consumer costs and savings that would be expected to result from new or amended standards at specific efficiency levels.<sup>59</sup> (“Consumer” in this context refers to consumers of the product being regulated.) DOE calculates the NES and NPV for the potential standard levels considered based on projections of annual product shipments, along with the annual energy consumption and total installed cost data from the energy use and LCC analyses. For the present analysis, DOE projected the energy savings, operating cost savings, product costs, and NPV of consumer benefits over the lifetime of GSLs sold from 2029 through 2058.

DOE evaluates the impacts of new or amended standards by comparing a case without such standards with standards-case projections. The no-new-standards case characterizes energy use and consumer costs for each product class in the absence of new or amended energy conservation standards. For this projection, DOE considers historical trends in efficiency and various forces that are likely to affect the mix of efficiencies over time. DOE compares the no-new-standards case with projections characterizing the market for each product class if DOE adopted new or amended standards at specific energy efficiency levels (*i.e.*, the TSLs or standards cases) for that class. For the standards cases, DOE considers how a given standard would likely affect the market shares of products with

efficacies greater than the standard and, in the case of Integrated Omnidirectional Long lamps, out-of-scope alternatives such as GSFLs.

DOE uses a model coded in the Python programming language to calculate the energy savings and the national consumer costs and savings from each TSL and presents the results in the form of a spreadsheet. Interested parties can review DOE’s analyses by changing various input quantities within the spreadsheet. The NIA uses typical values (as opposed to probability distributions) as inputs.

Table VI.23 summarizes the inputs and methods DOE used for the NIA analysis for the NOPR. Discussion of these inputs and methods are described in Table VI.23. See chapter 9 of the NOPR TSD for further details.

TABLE VI.23—SUMMARY OF INPUTS AND METHODS FOR THE NATIONAL IMPACT—ANALYSIS

Inputs	Method
Shipments .....	Annual shipments for each lamp option from shipments model for the no-new standards case and each TSL analyzed.
First Full Year of Compliance .....	2029.
No-New-Standards Case and Standards-case Efficacy Distributions.	Both No-New-Standards Case and Standards-case efficiency distributions are estimated by the market-share module of the shipments analysis.
Annual Energy Consumption per Unit .....	Calculated for each lamp option based on inputs from the Energy Use Analysis.
Total Installed Cost per Unit .....	Uses lamp prices, and for the commercial sector only, installation costs from the LCC analysis.
Annual Operating Cost per Unit .....	Calculated for each lamp option using the energy use per unit, and electricity prices and trends.
Energy Price Trends .....	<i>AEO2022</i> projections (to 2050) and held fixed to 2050 value thereafter.
Energy Site-to-Primary and FFC Conversion .....	A time-series conversion factor based on <i>AEO2022</i> .
Discount Rate .....	3 percent and 7 percent.
Present Year .....	2022.

1. National Energy Savings

The national energy savings analysis involves a comparison of national energy consumption of the considered products between each potential standards case (TSL) and the case with no new or amended energy conservation standards. DOE calculated the national energy consumption by multiplying the number of units (stock) of each product (by vintage or age) by the unit energy consumption (also by vintage). For the unit energy consumption, DOE used average hours of use that were product class and sector specific (*see* section VI.E.1 of this document). DOE calculated annual NES based on the difference in national energy consumption for the no-new standards case and for each higher efficiency standard case. DOE estimated energy consumption and savings based on site energy and converted the electricity consumption and savings to primary

energy (*i.e.*, the energy consumed by power plants to generate site electricity) using annual conversion factors derived from *AEO2022*. Cumulative energy savings are the sum of the NES for each year over the timeframe of the analysis.

Use of higher-efficiency products is occasionally associated with a direct rebound effect, which refers to an increase in utilization of the product due to the increase in efficiency. In the case of lighting, the rebound effect could be manifested in increased HOU or in increased lighting density (lamps per square foot). DOE assumed no rebound effect in both the residential and commercial sectors for consumers switching from CFLs to LED lamps or from less efficacious LED lamps to more efficacious LED lamps. This is due to the relatively small incremental increase in efficacy between CFLs and LED GSLs or less efficacious LED lamps and more efficacious LED lamps, as well as an examination of DOE’s 2001, 2010, and

2015 U.S. LMC studies, which indicates that there has been a reduction in total lamp operating hours in the residential sector concomitant with increases in lighting efficiency. Consistent with the residential sector, DOE does not expect there to be any rebound effect associated with the commercial sector. Therefore, DOE assumed no rebound effect in all NOPR scenarios for both the residential and commercial sectors.

In 2011, in response to the recommendations of a committee on “Point-of-Use and Full-Fuel-Cycle Measurement Approaches to Energy Efficiency Standards” appointed by the National Academy of Sciences, DOE announced its intention to use FFC measures of energy use and greenhouse gas and other emissions in the national impact analyses and emissions analyses included in future energy conservation standards rulemakings. 76 FR 51281 (Aug. 18, 2011). After evaluating the approaches discussed in the August 18,

<sup>59</sup> The NIA accounts for impacts in the 50 states and U.S. territories.

2011 notice, DOE published a statement of amended policy in which DOE explained its determination that EIA's National Energy Modeling System (NEMS) is the most appropriate tool for its FFC analysis and its intention to use NEMS for that purpose. 77 FR 49701 (Aug. 17, 2012). NEMS is a public domain, multi-sector, partial equilibrium model of the U.S. energy sector<sup>60</sup> that EIA uses to prepare its *Annual Energy Outlook*. The FFC factors incorporate losses in production and delivery in the case of natural gas (including fugitive emissions) and additional energy used to produce and deliver the various fuels used by power plants. The approach used for deriving FFC measures of energy use and emissions is described in appendix 9B of the NOPR TSD.

#### a. Smart Lamps

Integrated GSLs with standby functionality, henceforth referred to as smart lamps, were not explicitly analyzed in the shipments analysis for this NOPR analysis. To account for the additional standby energy consumption from smart lamps in the NIA, DOE assumed that smart lamps would make up an increasing fraction of Integrated Omnidirectional Short, Integrated Directional, Non-integrated Directional, and Non-integrated Omnidirectional lamps in the residential sector following a Bass adoption curve. DOE assumes for this NOPR that smart lamp penetration is limited to the residential sector.

DOE requests comment on the assumption that smart lamps will reach 50 percent market penetration by 2058. See section IX.E for a list of issues on which DOE seeks comment.

DOE assumed a standby power of 0.2 W per smart lamp in alignment with standby requirements in California Code of Regulations—Title 20, as it is assumed that manufacturers would sell the same smart lamp models in California as in the rest of the U.S.<sup>61</sup> DOE further assumed that the majority of smart lamps would be standalone and not require the need of a hub.

#### b. Unit Energy Consumption Adjustment To Account for GSL Lumen Distribution for the Integrated Omnidirectional Short Product Class

The engineering analysis provides representative units within the lumen

range of 750–1049 lumens for the Integrated Omnidirectional Short product class. For the NIA, DOE adjusted the energy use of the representative units for the Integrated Omnidirectional Short product class to account for the full distribution of GSL lumen outputs (*i.e.*, 310–2600 lumens).

Using the lumen range distribution for Integrated Omnidirectional Short A-line lamps from the March 2016 NOPR analysis derived from data provided by NRDC, DOE calculated unit energy consumption (UEC) scaling factors to apply to the energy use of the Integrated Omnidirectional Short representative lamp options by taking the ratio of the stock-weighted wattage equivalence of the full GSL lumen distribution to the wattage equivalent of the representative lamp bin (750–1049 lumens). DOE applied a UEC scaling factor of 1.15 for the residential sector and 1.21 for the commercial sector for Integrated Omnidirectional Short A-line lamps.

DOE requests comment on the methodology and assumptions used to determine the market share of the lumen range distributions. See section IX.E for a list of issues on which DOE seeks comment.

#### c. Unit Energy Consumption Adjustment To Account for Type A Integrated Omnidirectional Long Lamps

The representative units in the engineering analysis for the Integrated Omnidirectional Long product class represent Type B lamp options. To account for Type A lamps that were not explicitly modeled, DOE scaled the energy consumption values of Type B Integrated Omnidirectional Long lamp options based on the relative energy consumption of equivalent Type A lamps. DOE assumed a 60/40 market share of Type B and Type A linear LED lamps, respectively, based on product offerings in the DesignLights Consortium database, which was held constant throughout the analysis period.

DOE requests information on market share by lamp type and the composition of stock by type for Type A and Type B linear LED lamps in order to help refine the applied scaling. See section IX.E for a list of issues on which DOE seeks comment.

#### 2. Net Present Value Analysis

The inputs for determining the NPV of the total costs and benefits experienced by consumers are (1) total annual installed cost, (2) total annual operating costs (energy costs and repair and maintenance costs), and (3) a discount factor to calculate the present value of costs and savings. DOE calculates net savings each year as the

difference between the no-new-standards case and each standards case in terms of total savings in operating costs versus total increases in installed costs. DOE calculates operating cost savings over the lifetime of each product shipped during the projection period.

As discussed in section VI.G.1.b of this document, DOE developed LED lamp prices using a price-learning module incorporated in the shipments analysis. By 2058, which is the end date of the forecast period, the average LED GSL price is projected to drop 34.8 percent relative to 2021 in the no-new-standards case. DOE's projection of product prices as described in chapter 8 of the NOPR TSD.

The operating-cost savings are primarily energy cost savings, which are calculated using the estimated energy savings in each year and the projected price of electricity. To estimate energy prices in future years, DOE multiplied the average national marginal electricity prices by the forecast of annual national-average residential or commercial electricity price changes in the Reference case from *AEO2022*, which has an end year of 2050. For years after 2050, DOE maintained the 2050 electricity price. As part of the NIA, DOE also analyzed scenarios that used inputs from variants of the *AEO2022* Reference case that have lower and higher economic growth. Those cases have lower and higher energy price trends compared to the Reference case. NIA results based on these cases are presented in appendix 9C of the NOPR TSD.

In calculating the NPV, DOE multiplies the net savings in future years by a discount factor to determine their present value. For this NOPR, DOE estimated the NPV of consumer benefits using both a 3-percent and a 7-percent real discount rate. DOE uses these discount rates in accordance with guidance provided by the Office of Management and Budget (OMB) to Federal agencies on the development of regulatory analysis.<sup>62</sup> The discount rates for the determination of NPV are in contrast to the discount rates used in the LCC analysis, which are designed to reflect a consumer's perspective. The 7-percent real value is an estimate of the average before-tax rate of return to private capital in the U.S. economy. The 3-percent real value represents the "social rate of time preference," which is the rate at which society discounts

<sup>60</sup> For more information on NEMS, refer to *The National Energy Modeling System: An Overview 2009*, DOE/EIA-0581(2009), October 2009. Available at [https://www.eia.gov/analysis/pdffiles/0581\(2009\)index.php](https://www.eia.gov/analysis/pdffiles/0581(2009)index.php) (last accessed 4/21/2022).

<sup>61</sup> California Energy Commission. California Code of Regulations: Title 20—Public Utilities and Energy. May 2018.

<sup>62</sup> United States Office of Management and Budget. *Circular A-4: Regulatory Analysis*. September 17, 2003. Section E. Available at [https://www.whitehouse.gov/wp-content/uploads/legacy\\_drupal\\_files/omb/circulars/A4/a-4.pdf](https://www.whitehouse.gov/wp-content/uploads/legacy_drupal_files/omb/circulars/A4/a-4.pdf) (last accessed March 25, 2022).

future consumption flows to their present value.

### I. Consumer Subgroup Analysis

In analyzing the potential impact of new or amended energy conservation standards on consumers, DOE evaluates the impact on identifiable subgroups of consumers that may be disproportionately affected by a new or amended national standard. The purpose of a subgroup analysis is to determine the extent of any such disproportional impacts. DOE evaluates impacts on particular subgroups of consumers by analyzing the LCC impacts and PBP for those particular consumers from alternative standard levels. For this NOPR, DOE analyzed the impacts of the considered standard levels on two subgroups—low-income households and small businesses—using the analytical framework and inputs described in section VI.F of this document.

Chapter 10 in the NOPR TSD describes the consumer subgroup analysis.

### J. Manufacturer Impact Analysis

#### 1. Overview

DOE performed an MIA to estimate the financial impacts of new and amended energy conservation standards on manufacturers of GSLs and to estimate the potential impacts of such standards on employment and manufacturing capacity. The MIA has both quantitative and qualitative aspects and includes analyses of projected industry cash flows, the INPV, as well as investments in research and development (R&D) and manufacturing capital. Additionally, the MIA seeks to determine how new and amended energy conservation standards might affect domestic manufacturing employment, capacity, and competition, as well as how standards contribute to overall regulatory burden. Finally, the MIA serves to identify any disproportionate impacts on manufacturer subgroups, including small business manufacturers.

The quantitative part of the MIA primarily relies on the GRIM, an industry cash flow model with inputs specific to this rulemaking. The key GRIM inputs include data on the industry cost structure, unit production costs, product shipments, manufacturer markups, and investments in R&D and manufacturing capital required to produce compliant products. The key GRIM output is the INPV, which is the sum of industry annual cash flows over the analysis period, discounted using the industry-weighted average cost of

capital. The model uses standard accounting principles to estimate the impacts of more-stringent energy conservation standards on a given industry by comparing changes in INPV between a no-new-standards case and the various standards cases (*i.e.*, TSLs). To capture the uncertainty relating to manufacturer pricing strategies following new and amended standards, the GRIM estimates a range of possible impacts under different manufacturer markup scenarios.

The qualitative part of the MIA addresses manufacturer characteristics and market trends. Specifically, the MIA considers such factors as a potential standard's impact on domestic production and non-production employment, manufacturing capacity, competition within the industry, the cumulative impact of other DOE and non-DOE regulations, and impacts on manufacturer subgroups. The complete MIA is outlined in chapter 11 of the NOPR TSD.

#### 2. Government Regulatory Impact Model and Key Inputs

DOE uses the GRIM to quantify the changes in cash flow due to new and amended standards that could result in a higher or lower industry value. The GRIM uses an annual discounted cash-flow analysis that incorporates MPCs, manufacturer markups, shipments, and industry financial information as inputs. The GRIM models changes in costs, distribution of shipments, investments, and manufacturer margins that could result from new and amended energy conservation standards. The GRIM uses the inputs to arrive at a series of annual cash flows, beginning in 2022 (the reference year of the analysis) and continuing to 2058. DOE calculated INPVs by summing the stream of annual discounted cash flows during this period. For manufacturers of GSLs, DOE used a real discount rate of 6.1 percent, which was derived from industry financials and then modified according to feedback received during manufacturer interviews.

The GRIM calculates cash flows using standard accounting principles and compares changes in INPV between the no-new-standards case and each TSL. The difference in INPV between the no-new-standards case and a standards case represents the financial impact of the new and amended energy conservation standards on GSL manufacturers. As discussed previously, DOE developed critical GRIM inputs using several sources, including publicly available data, results of the engineering analysis, and information gathered from industry stakeholders during manufacturer

interviews and previous rulemaking public comments. The GRIM results are presented in section VII.B.2. Additional details about the GRIM, the discount rate, and other financial parameters can be found in chapter 11 of the NOPR TSD.

#### a. Manufacturer Production Costs

Manufacturing more efficacious GSLs can result in changes in MPCs as a result of varying components and technology types necessary to meet standards for each TSL. Changes in MPCs for these more efficacious components can impact the revenue, gross margin, and cash flows of GSL manufacturers. Typically, DOE develops MPCs for the covered products using reverse-engineering. These costs are used as an input to the LCC analysis and NIA. However, because lamps are difficult to reverse-engineer, DOE directly derived end-user prices and then used those prices in conjunction with average distribution chain markups and manufacturer markups to calculate the MPCs of GSLs.

To determine MPCs of GSLs from the end-user prices, DOE divided the end-user price by the average distribution chain markup and then again by the average manufacturer markup of the representative GSLs at each EL. DOE used the SEC 10-Ks of publicly traded GSL manufacturers to estimate the manufacturer markup of 1.55 for all GSLs in this rulemaking. DOE used the SEC 10-Ks of the major publicly traded lighting retailers to estimate the distribution chain markup of 1.52 for all GSLs.

For a complete description of end-user prices, see the cost analysis in section VI.D of this document.

DOE requests comment on the use of 1.52 as the average distribution chain markup for all GSLs and the use of 1.55 as the average manufacturer markup for all GSLs. See section IX.E for a list of issues on which DOE seeks comment.

#### b. Shipments Projections

The GRIM estimates manufacturer revenues based on total GSL shipment projections and the distribution of those shipments by product class and EL. Changes in sales volumes and efficacy mix over time can significantly affect manufacturer finances. For this analysis, DOE developed a consumer-choice-based model to estimate shipments of GSLs. The model projects consumer purchases (and hence shipments) based on sector-specific consumer sensitivities to first cost, energy savings, lamp lifetime, and lamp mercury content. For a complete description of the shipments used in the GRIM, see the shipments

analysis discussion in section VI.G of this document.

### c. Product and Capital Conversion Costs

New and amended energy conservation standards could cause manufacturers to incur conversion costs to bring their production facilities and product designs into compliance. DOE evaluated the level of conversion-related expenditures that would be needed to comply with each considered EL in each product class. For the MIA, DOE classified these conversion costs into two major groups: (1) product conversion costs; and (2) capital conversion costs. Product conversion costs are investments in research, development, testing, marketing, and other non-capitalized costs necessary to make product designs comply with new and amended energy conservation standards. Capital conversion costs are investments in property, plant, and equipment necessary to adapt or change existing production facilities such that new compliant product designs can be fabricated and assembled.

Using feedback from manufacturer interviews, DOE conducted a bottom-up analysis to calculate the product conversion costs for GSL manufacturers for each product class at each EL. To conduct this bottom-up analysis, DOE used manufacturer input from manufacturer interviews regarding the average dollar amounts or average amount of labor estimated to design a new product or remodel an existing model. DOE then estimated the number of GSL models that would need to be remodeled or introduced into the market for each product class at each EL in the standard year using DOE's database of existing GSL models and the distribution of shipments from the shipments analysis (see section VI.G).

DOE assumed GSL manufacturers would not re-model non-compliant CFL models into compliant CFL models, even if it is possible for the remodeled CFLs to meet the analyzed energy conservation standards. Additionally, DOE assumed that GSL manufacturers would not need to introduce any new LED lamp models due to CFL models not being able to meet the analyzed energy conservation standards.<sup>63</sup> However, DOE assumed that all non-compliant LED lamp models would be remodeled to meet the analyzed energy conservation standards.

<sup>63</sup> Based on the Shipment Analysis, LED lamp sales exceed 95 percent of the total GSL sales for every analyzed product class by 2029 (the estimated compliance year of this analysis). DOE assumed there are replacement LED lamps for all CFL models.

Based on feedback in manufacturer interviews, DOE assumed that most LED lamp models would be remodeled between the estimated publication of this rulemaking's final rule and the estimated date which energy conservation standards are required, even in the absence of DOE energy conservation standards for GSLs. Additionally, DOE estimated that remodeling a non-compliant LED lamp model, that would already be scheduled to be remodeled, into a compliant one would require an additional month of engineering time per LED lamp model.<sup>64</sup>

DOE assumed that capital conversion costs would only be necessary if GSL manufacturers would need to increase the production volume of LED lamps in the standards case compared to the no-new-standards case and if existing LED lamp production capacity did not already exist to meet this additional market demand for LED lamps. Based on the shipments analysis, the volume of LED lamp sales in the years leading up to 2029, exceeds the volume of LED lamp sales in 2029 (the estimated first full year of compliance) for every product class at all TSLs. Therefore, DOE assumed no capital conversion costs as GSL manufacturers would not need to make any additional investments in product equipment to maintain, or reduce, their LED lamp production volumes from the previous year.

In general, DOE assumes all conversion-related investments occur between the expected year of publication of the final rule and the year by which manufacturers must comply with the new and amended standards. The conversion cost figures used in the GRIM can be found in section VII.B.2 of this document. For additional information on the estimated capital and product conversion costs, see chapter 11 of the NOPR TSD.

DOE requests comment on the methodology used to calculate product and capital conversion costs for GSLs in this NOPR. Specifically, DOE requests comment on whether GSL manufacturers would incur any capital conversion costs, given the decline in LED lamp sales leading up to the compliance year for all TSLs. If capital conversion costs would be incurred,

<sup>64</sup> Based on feedback from manufacturers, DOE estimates that most LED lamp models are remodeled approximately every 2 years and it takes manufacturers approximately 6 months of engineering time to remodel one LED lamp model. DOE is therefore estimating that it would take manufacturers approximately 7 months (one additional month) to remodel a non-compliant LED lamp model into a compliant LED lamp model, due to the extra efficacy and any other requirement induced by DOE's standards.

DOE requests these costs be quantified, if possible. Additionally, DOE requests comment on the estimated product conversion costs; the assumption that most LED lamp models would be remodeled between the estimated publication of this rulemaking's final rule and the estimated date which energy conservation standards are required, even in the no-new-standards case; and the estimated additional engineering time to remodel LED lamp models to comply with the analyzed TSLs. See section IX.E for a list of issues on which DOE seeks comment.

### d. Markup Scenarios

As previously discussed in section VI.J.2.a, the MPCs for GSLs are the manufacturers' costs for those units. These costs include materials, labor, depreciation, and overhead, which are collectively referred to as the cost of goods sold (COGS). The MSP is the price received by GSL manufacturers from their consumers, typically a distributor, regardless of the downstream distribution channel through which the GSLs are ultimately sold. The MSP is not the cost the end-user pays for GSLs because there are typically multiple sales along the distribution chain and various markups applied to each sale. The MSP equals the MPC multiplied by the manufacturer markup. The manufacturer markup covers all the GSL manufacturer's non-production costs (*i.e.*, selling, general and administrative expenses (SG&A); R&D; interest) as well as profit. Total industry revenue for GSL manufacturers equals the MSPs at each product class and EL multiplied by the number of shipments at that product class and EL. Modifying these manufacturer markups in the standards cases yields different sets of impacts on manufacturers.

For the MIA, DOE modeled two standards-case manufacturer markup scenarios to represent uncertainty regarding the potential impacts on prices and profitability for manufacturers following the implementation of new and amended energy conservation standards: (1) a preservation of gross margin scenario; and (2) a preservation of operating profit scenario. These scenarios lead to different manufacturer margins that, when applied to the MPCs, result in varying revenue and cash flow impacts on GSL manufacturers.

Under the preservation of gross margin scenario, DOE assumes the COGS for each product is marked up by a fixed percentage to cover SG&A expenses, R&D expenses, interest expenses, and profit. This allows manufacturers to preserve the same

gross margin, as a percentage, in the standards cases as in the no-new-standards case, despite higher MPCs. In this manufacturer markup scenario, GSL manufacturers fully pass on any additional MPC increase due to standards to their consumers. As previously discussed in section VI.J.2.a, DOE used a manufacturer markup of 1.55 for all GSLs in the no-new-standards case. DOE used this same manufacturer markup for all TSLs in the preservation of gross margin scenario. This manufacturer markup scenario represents the upper-bound of manufacturer INPV and is the manufacturer markup scenario used to calculate the economic impacts on consumers.

Under the preservation of operating profit scenario, DOE modeled a situation in which manufacturers are not able to increase per-unit operating profit in proportion to increases in MPCs in the standards cases. Under this scenario, as the cost of production increases, manufacturers reduce the manufacturer margins to maintain a cost competitive offering in the market. Therefore, gross margin (as a percentage) shrinks in the standards cases. This manufacturer markup scenario represents the lower-bound to industry profitability under new and amended energy conservation standards.

A comparison of industry financial impacts under the two manufacturer markup scenarios is presented in section VII.B.2.a of this document.

#### K. Emissions Analysis

The emissions analysis consists of two components. The first component estimates the effect of potential energy conservation standards on power sector and site (where applicable) combustion emissions of CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub>, and Hg. The second component estimates the impacts of potential standards on emissions of two additional greenhouse gases, CH<sub>4</sub> and N<sub>2</sub>O, as well as the reductions to emissions of other gases due to “upstream” activities in the fuel production chain. These upstream activities comprise extraction, processing, and transporting fuels to the site of combustion.

The analysis of electric power sector emissions of CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub>, and Hg uses emissions factors intended to represent the marginal impacts of the change in electricity consumption associated with amended or new standards. The methodology is based on results published for the *AEO*, including a set of side cases that implement a variety of efficiency-related policies. The methodology is described in

appendix 12A in the NOPR TSD. The analysis presented in this rulemaking uses projections from *AEO2022*. Power sector emissions of CH<sub>4</sub> and N<sub>2</sub>O from fuel combustion are estimated using Emission Factors for Greenhouse Gas Inventories published by the Environmental Protection Agency (EPA).<sup>65</sup>

FFC upstream emissions, which include emissions from fuel combustion during extraction, processing, and transportation of fuels, and “fugitive” emissions (direct leakage to the atmosphere) of CH<sub>4</sub> and CO<sub>2</sub>, are estimated based on the methodology described in chapter 14 of the NOPR TSD.

The emissions intensity factors are expressed in terms of physical units per megawatt-hours (MWh) or million British thermal units (MMBtu) of site energy savings. For power sector emissions, specific emissions intensity factors are calculated by sector and end use. Total emissions reductions are estimated using the energy savings calculated in the national impact analysis.

#### 1. Air Quality Regulations Incorporated in DOE’s Analysis

DOE’s no-new-standards case for the electric power sector reflects the *AEO*, which incorporates the projected impacts of existing air quality regulations on emissions. *AEO2022* generally represents current legislation and environmental regulations, including recent government actions, that were in place at the time of preparation of *AEO2022*, including the emissions control programs discussed in the following paragraphs.<sup>66</sup>

SO<sub>2</sub> emissions from affected electric generating units (EGUs) are subject to nationwide and regional emissions cap-and-trade programs. Title IV of the Clean Air Act sets an annual emissions cap on SO<sub>2</sub> for affected EGUs in the 48 contiguous States and the District of Columbia (DC). (42 U.S.C. 7651 *et seq.*) SO<sub>2</sub> emissions from numerous States in the eastern half of the United States are also limited under the Cross-State Air Pollution Rule (CSAPR). 76 FR 48208 (Aug. 8, 2011). CSAPR requires these States to reduce certain emissions, including annual SO<sub>2</sub> emissions; it went into effect in 2015 and has been

subsequently updated.<sup>67</sup> *AEO2022* incorporates implementation of CSAPR, including the Revised CSAPR Update issued in 2021. Compliance with CSAPR is flexible among EGUs and is enforced through the use of tradable emissions allowances. Under existing EPA regulations, for states subject to SO<sub>2</sub> emissions limits under CSAPR, any excess SO<sub>2</sub> emissions allowances resulting from the lower electricity demand caused by the adoption of an efficiency standard could be used to permit offsetting increases in SO<sub>2</sub> emissions by another regulated EGU.

Beginning in 2016, SO<sub>2</sub> emissions began to fall as a result of implementation of the Mercury and Air Toxics Standards (MATS) for power plants. 77 FR 9304 (Feb. 16, 2012). In the MATS final rule, EPA established a standard for hydrogen chloride as a surrogate for acid gas hazardous air pollutants (HAP), and also established a standard for SO<sub>2</sub> (a non-HAP acid gas) as an alternative equivalent surrogate standard for acid gas HAP. The same controls are used to reduce HAP and non-HAP acid gas; thus, SO<sub>2</sub> emissions are being reduced as a result of the control technologies installed on coal-fired power plants to comply with the MATS requirements for acid gas. In order to continue operating, coal power plants must have either flue gas desulfurization or dry sorbent injection systems installed. Both technologies, which are used to reduce acid gas emissions, also reduce SO<sub>2</sub> emissions. Because of the emissions reductions under the MATS, it is unlikely that excess SO<sub>2</sub> emissions allowances resulting from the lower electricity demand would be needed or used to permit offsetting increases in SO<sub>2</sub> emissions by another regulated EGU. Therefore, energy conservation standards that decrease electricity generation would generally reduce SO<sub>2</sub> emissions. DOE estimated SO<sub>2</sub> emissions reduction using emissions factors based on *AEO2022*.

CSAPR also established limits on NO<sub>x</sub> emissions for numerous States in the

<sup>67</sup> CSAPR requires states to address annual emissions of SO<sub>2</sub> and NO<sub>x</sub>, precursors to the formation of fine particulate matter (PM<sub>2.5</sub>) pollution, in order to address the interstate transport of pollution by attaining and maintaining compliance with the 1997 and 2006 PM<sub>2.5</sub> National Ambient Air Quality Standards (NAAQS). CSAPR also requires certain states to address the ozone season (May–September) emissions of NO<sub>x</sub>, a precursor to the formation of ozone pollution, in order to address the interstate transport of ozone pollution with respect to the 1997 ozone NAAQS. 76 FR 48208 (Aug. 8, 2011). EPA subsequently issued a supplemental rule that included an additional five states in the CSAPR ozone season program; 76 FR 80760 (Dec. 27, 2011) (Supplemental Rule).

<sup>65</sup> Available at [www.epa.gov/sites/production/files/2021-04/documents/emission-factors\\_apr2021.pdf](http://www.epa.gov/sites/production/files/2021-04/documents/emission-factors_apr2021.pdf) (last accessed August 4, 2022).

<sup>66</sup> For further information, see the Assumptions to *AEO2022* report that sets forth the major assumptions used to generate the projections in the Annual Energy Outlook. Available at <https://www.eia.gov/outlooks/aeo/assumptions/> (last accessed June 23, 2022).



eastern half of the United States. Energy conservation standards would have little effect on NO<sub>x</sub> emissions in those States covered by CSAPR emissions limits if excess NO<sub>x</sub> emissions allowances resulting from the lower electricity demand could be used to permit offsetting increases in NO<sub>x</sub> emissions from other EGUs. In such case, NO<sub>x</sub> emissions would remain near the limit even if electricity generation goes down. A different case could possibly result, depending on the configuration of the power sector in the different regions and the need for allowances, such that NO<sub>x</sub> emissions might not remain at the limit in the case of lower electricity demand. In this case, energy conservation standards might reduce NO<sub>x</sub> emissions in covered States. Despite this possibility, DOE has chosen to be conservative in its analysis and has maintained the assumption that standards will not reduce NO<sub>x</sub> emissions in States covered by CSAPR. Energy conservation standards would be expected to reduce NO<sub>x</sub> emissions in the States not covered by CSAPR.

The MATS limit mercury emissions from power plants, but they do not include emissions caps and, as such, DOE's energy conservation standards would be expected to slightly reduce Hg emissions. DOE estimated mercury emissions reduction using emissions factors based on *AEO2022*, which incorporates the MATS.

#### L. Monetizing Emissions Impacts

As part of the development of this proposed rule, for the purpose of complying with the requirements of Executive Order 12866, DOE considered the estimated monetary climate and health benefits from the reduced emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, NO<sub>x</sub>, and SO<sub>2</sub> that are expected to result from each of the TSLs considered. In order to make this calculation analogous to the calculation of the NPV of consumer benefit, DOE considered the reduced emissions expected to result over the lifetime of products shipped in the projection period for each TSL. This section summarizes the basis for the values used for monetizing the emissions benefits and presents the values considered in this NOPR.

##### 1. Monetization of Greenhouse Gas Emissions

On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the federal government's emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the

Fifth Circuit's order, the preliminary injunction is no longer in effect, pending resolution of the federal government's appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this proposed rule, DOE has reverted to its approach prior to the injunction and presents monetized greenhouse gas abatement benefits where appropriate and permissible under law. DOE requests comment on how to address the climate benefits and other effects of the proposal. See section IX.E for a list of issues on which DOE seeks comment.

DOE estimates the monetized benefits of the reductions in emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O by using a measure of the social cost (SC) of each pollutant (*e.g.*, SC–CO<sub>2</sub>). These estimates represent the monetary value of the net harm to society associated with a marginal increase in emissions of these pollutants in a given year, or the benefit of avoiding that increase. These estimates are intended to include (but are not limited to) climate-change-related changes in net agricultural productivity, human health, property damages from increased flood risk, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services.

DOE exercises its own judgment in presenting monetized climate benefits as recommended by applicable Executive Orders, and DOE would reach the same conclusion presented in this rulemaking in the absence of the social cost of greenhouse gases, including the February 2021 Interim Estimates presented by the Interagency Working Group on the Social Cost of Greenhouse Gases. DOE estimated the global social benefits of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O reductions (*i.e.*, SC–GHGs) using the estimates presented in the Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990, published in February 2021 by the Interagency Working Group on the Social Cost of Greenhouse Gases (IWG).<sup>68</sup> The SC–GHGs is the monetary

value of the net harm to society associated with a marginal increase in emissions in a given year, or the benefit of avoiding that increase. In principle, SC–GHGs includes the value of all climate change impacts, including (but not limited to) changes in net agricultural productivity, human health effects, property damage from increased flood risk and natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services. The SC–GHGs therefore, reflects the societal value of reducing emissions of the gas in question by one metric ton. The SC–GHGs is the theoretically appropriate value to use in conducting benefit-cost analyses of policies that affect CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> emissions. As a member of the IWG involved in the development of the February 2021 SC–GHG TSD, the DOE agrees that the interim SC–GHG estimates represent the most appropriate estimate of the SC–GHG until revised estimates have been developed reflecting the latest, peer-reviewed science.

The SC–GHGs estimates presented here were developed over many years, using transparent process, peer-reviewed methodologies, the best science available at the time of that process, and with input from the public. Specifically, in 2009, an IWG that included the DOE and other executive branch agencies and offices was established to ensure that agencies were using the best available science and to promote consistency in the social cost of carbon (SC–CO<sub>2</sub>) values used across agencies. The IWG published SC–CO<sub>2</sub> estimates in 2010 that were developed from an ensemble of three widely cited integrated assessment models (IAMs) that estimate global climate damages using highly aggregated representations of climate processes and the global economy combined into a single modeling framework. The three IAMs were run using a common set of input assumptions in each model for future population, economic, and CO<sub>2</sub> emissions growth, as well as equilibrium climate sensitivity—a measure of the globally averaged temperature response to increased atmospheric CO<sub>2</sub> concentrations. These estimates were updated in 2013 based on new versions of each IAM. In August 2016 the IWG published estimates of the social cost of methane (SC–CH<sub>4</sub>) and nitrous oxide (SC–N<sub>2</sub>O) using

<sup>68</sup> See Interagency Working Group on Social Cost of Greenhouse Gases, *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates Under Executive Order 13990*,

Washington, DC, February 2021. Available at: [www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument\\_SocialCostofCarbonMethaneNitrousOxide.pdf](http://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf) (last accessed March 17, 2021).

methodologies that are consistent with the methodology underlying the SC-CO<sub>2</sub> estimates. The modeling approach that extends the IWG SC-CO<sub>2</sub> methodology to non-CO<sub>2</sub> GHGs has undergone multiple stages of peer review. The SC-CH<sub>4</sub> and SC-N<sub>2</sub>O estimates were developed by Marten et al. and underwent a standard double-blind peer review process prior to journal publication.<sup>69</sup>

In 2015, as part of the response to public comments received to a 2013 solicitation for comments on the SC-CO<sub>2</sub> estimates, the IWG announced a National Academies of Sciences, Engineering, and Medicine review of the SC-CO<sub>2</sub> estimates to offer advice on how to approach future updates to ensure that the estimates continue to reflect the best available science and methodologies. In January 2017, the National Academies released their final report, *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide*, and recommended specific criteria for future updates to the SC-CO<sub>2</sub> estimates, a modeling framework to satisfy the specified criteria, and both near-term updates and longer-term research needs pertaining to various components of the estimation process.<sup>70</sup> Shortly thereafter, in March 2017, President Trump issued Executive Order 13783, which disbanded the IWG, withdrew the previous TSDs, and directed agencies to ensure SC-CO<sub>2</sub> estimates used in regulatory analyses are consistent with the guidance contained in OMB's Circular A-4, "including with respect to the consideration of domestic versus international impacts and the consideration of appropriate discount rates" (E.O. 13783, Section 5(c)). Benefit-cost analyses following E.O. 13783 used SC-GHG estimates that attempted to focus on the U.S.-specific share of climate change damages as estimated by the models and were calculated using two discount rates recommended by Circular A-4, 3 percent and 7 percent. All other methodological decisions and model versions used in SC-GHG calculations remained the same as those used by the IWG in 2010 and 2013, respectively.

<sup>69</sup> Marten, A.L., E.A. Kopits, C.W. Griffiths, S.C. Newbold, and A. Wolverton. *Incremental CH<sub>4</sub> and N<sub>2</sub>O mitigation benefits consistent with the U.S. Government's SC-CO<sub>2</sub> estimates*. *Climate Policy*. 2015. 15(2): pp. 272-298.

<sup>70</sup> National Academies of Sciences, Engineering, and Medicine. *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide*. 2017. The National Academies Press: Washington, DC. (Last accessed September 28, 2021.) <https://www.nap.edu/catalog/24651/valuing-climate-damages-updating-estimation-of-the-social-cost-of>

On January 20, 2021, President Biden issued Executive Order 13990, which re-established the IWG and directed it to ensure that the U.S. Government's estimates of the social cost of carbon and other greenhouse gases reflect the best available science and the recommendations of the National Academies (2017). The IWG was tasked with first reviewing the SC-GHG estimates currently used in Federal analyses and publishing interim estimates within 30 days of the E.O. that reflect the full impact of GHG emissions, including by taking global damages into account. The interim SC-GHG estimates published in February 2021 are used here to estimate the climate benefits for this proposed rulemaking. The E.O. instructs the IWG to undertake a fuller update of the SC-GHG estimates by January 2022 that takes into consideration the advice of the National Academies (2017) and other recent scientific literature. The February 2021 SC-GHG TSD provides a complete discussion of the IWG's initial review conducted under E.O. 13990. In particular, the IWG found that the SC-GHG estimates used under E.O. 13783 fail to reflect the full impact of GHG emissions in multiple ways.

First, the IWG found that the SC-GHG estimates used under E.O. 13783 fail to fully capture many climate impacts that affect the welfare of U.S. citizens and residents, and those impacts are better reflected by global measures of the SC-GHG. Examples of omitted effects from the E.O. 13783 estimates include direct effects on U.S. citizens, assets, and investments located abroad, supply chains, U.S. military assets and interests abroad, and tourism, and spillover pathways such as economic and political destabilization and global migration that can lead to adverse impacts on U.S. national security, public health, and humanitarian concerns. In addition, assessing the benefits of U.S. GHG mitigation activities requires consideration of how those actions may affect mitigation activities by other countries, as those international mitigation actions will provide a benefit to U.S. citizens and residents by mitigating climate impacts that affect U.S. citizens and residents. A wide range of scientific and economic experts have emphasized the issue of reciprocity as support for considering global damages of GHG emissions. If the United States does not consider impacts on other countries, it is difficult to convince other countries to consider the impacts of their emissions on the United States. The only way to achieve an efficient allocation of resources for

emissions reduction on a global basis—and so benefit the U.S. and its citizens—is for all countries to base their policies on global estimates of damages. As a member of the IWG involved in the development of the February 2021 SC-GHG TSD, DOE agrees with this assessment and, therefore, in this proposed rule DOE centers attention on a global measure of SC-GHG. This approach is the same as that taken in DOE regulatory analyses from 2012 through 2016. A robust estimate of climate damages to U.S. citizens and residents does not currently exist in the literature. As explained in the February 2021 TSD, existing estimates are both incomplete and an underestimate of total damages that accrue to the citizens and residents of the U.S. because they do not fully capture the regional interactions and spillovers discussed above, nor do they include all of the important physical, ecological, and economic impacts of climate change recognized in the climate change literature. As noted in the February 2021 SC-GHG TSD, the IWG will continue to review developments in the literature, including more robust methodologies for estimating U.S.-specific SC-GHG values, and explore ways to better inform the public of the full range of carbon impacts. As a member of the IWG, DOE will continue to follow developments in the literature pertaining to this issue.

Second, the IWG found that the use of the social rate of return on capital (7 percent under current OMB Circular A-4 guidance) to discount the future benefits of reducing GHG emissions inappropriately underestimates the impacts of climate change for the purposes of estimating the SC-GHG. Consistent with the findings of the National Academies (2017) and the economic literature, the IWG continued to conclude that the consumption rate of interest is the theoretically appropriate discount rate in an intergenerational context, and recommended that discount rate uncertainty and relevant aspects of intergenerational ethical considerations be accounted for in selecting future discount rates.<sup>71 72 73 74</sup>

<sup>71</sup> Interagency Working Group on Social Cost of Carbon. *Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866*. 2010. United States Government. (Last accessed May 18, 2022.) [www.epa.gov/sites/default/files/2016-12/documents/scc\\_tsd\\_2010.pdf](http://www.epa.gov/sites/default/files/2016-12/documents/scc_tsd_2010.pdf).

<sup>72</sup> Interagency Working Group on Social Cost of Carbon. *Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866*. 2013. (Last accessed May 18, 2022.) [www.federalregister.gov/documents/2013/11/26/2013-28242/technical-support-document-technical-update-of-the-social-cost-of-carbon-for-regulatory-impact](http://www.federalregister.gov/documents/2013/11/26/2013-28242/technical-support-document-technical-update-of-the-social-cost-of-carbon-for-regulatory-impact).

Furthermore, the damage estimates developed for use in the SC–GHG are estimated in consumption-equivalent terms, and so an application of OMB Circular A–4’s guidance for regulatory analysis would then use the consumption discount rate to calculate the SC–GHG. DOE agrees with this assessment and will continue to follow developments in the literature pertaining to this issue. DOE also notes that while OMB Circular A–4, as published in 2003, recommends using 3% and 7% discount rates as “default” values, Circular A–4 also reminds agencies that “different regulations may call for different emphases in the analysis, depending on the nature and complexity of the regulatory issues and the sensitivity of the benefit and cost estimates to the key assumptions.” On discounting, Circular A–4 recognizes that “special ethical considerations arise when comparing benefits and costs across generations,” and Circular A–4 acknowledges that analyses may appropriately “discount future costs and consumption benefits. . . at a lower rate than for intragenerational analysis.” In the 2015 Response to Comments on the Social Cost of Carbon for Regulatory Impact Analysis, OMB, DOE, and the other IWG members recognized that “Circular A–4 is a living document” and “the use of 7 percent is not considered appropriate for intergenerational discounting. There is wide support for this view in the academic literature, and it is recognized in Circular A–4 itself.” Thus, DOE concludes that a 7% discount rate is not appropriate to apply to value the social cost of greenhouse gases in the analysis presented in this analysis. In this analysis, to calculate the present and annualized values of climate benefits, DOE uses the same discount rate as the rate used to discount the value of damages from future GHG emissions, for internal consistency. That approach to discounting follows the same approach that the February 2021 TSD

recommends “to ensure internal consistency—*i.e.*, future damages from climate change using the SC–GHG at 2.5 percent should be discounted to the base year of the analysis using the same 2.5 percent rate.” DOE has also consulted the National Academies’ 2017 recommendations on how SC–GHG estimates can “be combined in RIAs with other cost and benefits estimates that may use different discount rates.” The National Academies reviewed “several options,” including “presenting all discount rate combinations of other costs and benefits with [SC–GHG] estimates.”

As a member of the IWG involved in the development of the February 2021 SC–GHG TSD, DOE agrees with this assessment and will continue to follow developments in the literature pertaining to this issue. While the IWG works to assess how best to incorporate the latest, peer reviewed science to develop an updated set of SC–GHG estimates, it set the interim estimates to be the most recent estimates developed by the IWG prior to the group being disbanded in 2017. The estimates rely on the same models and harmonized inputs and are calculated using a range of discount rates. As explained in the February 2021 SC–GHG TSD, the IWG has recommended that agencies use the same set of four values drawn from the SC–GHG distributions based on three discount rates and subject to public comment. For each discount rate, the IWG combined the distributions across models and socioeconomic emissions scenarios (applying equal weight to each) and then selected a set of four values recommended for use in benefit-cost analyses: an average value resulting from the model runs for each of three discount rates (2.5 percent, 3 percent, and 5 percent), plus a fourth value, selected as the 95th percentile of estimates based on a 3 percent discount rate. The fourth value was included to provide information on potentially higher-than-expected economic impacts from climate change. As explained in the February 2021 SC–GHG TSD, and DOE agrees, this update reflects the immediate need to have operational SC–GHG values for use in regulatory benefit-cost analyses and other applications that were developed using a transparent process, peer-reviewed methodologies, and the science available at the time of that process. Those estimates were subject to public comment in the context of dozens of proposed rulemakings as well as in a dedicated public comment period in 2013.

There are a number of limitations and uncertainties associated with the SC–

GHG estimates. First, the current scientific and economic understanding of discounting approaches suggests discount rates appropriate for intergenerational analysis in the context of climate change are likely to be less than 3 percent, near 2 percent or lower.<sup>75</sup> Second, the IAMs used to produce these interim estimates do not include all of the important physical, ecological, and economic impacts of climate change recognized in the climate change literature and the science underlying their “damage functions”—*i.e.*, the core parts of the IAMs that map global mean temperature changes and other physical impacts of climate change into economic (both market and nonmarket) damages—lags behind the most recent research. For example, limitations include the incomplete treatment of catastrophic and non-catastrophic impacts in the integrated assessment models, their incomplete treatment of adaptation and technological change, the incomplete way in which inter-regional and intersectoral linkages are modeled, uncertainty in the extrapolation of damages to high temperatures, and inadequate representation of the relationship between the discount rate and uncertainty in economic growth over long time horizons. Likewise, the socioeconomic and emissions scenarios used as inputs to the models do not reflect new information from the last decade of scenario generation or the full range of projections. The modeling limitations do not all work in the same direction in terms of their influence on the SC–CO<sub>2</sub> estimates. However, as discussed in the February 2021 TSD, the IWG has recommended that, taken together, the limitations suggest that the interim SC–GHG estimates used in this final rule likely underestimate the damages from GHG emissions. DOE concurs with this assessment.

DOE’s derivations of the SC–CO<sub>2</sub>, SC–N<sub>2</sub>O, and SC–CH<sub>4</sub> values used for this NOPR are discussed in the following sections, and the results of DOE’s analyses estimating the benefits of the reductions in emissions of these pollutants are presented in section VII.B.6.

<sup>75</sup> Interagency Working Group on Social Cost of Greenhouse Gases (IWG). 2021. Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990. February. United States Government. Available at: <<https://www.whitehouse.gov/briefing-room/blog/2021/02/26/a-return-to-science-evidence-based-estimates-of-the-benefits-of-reducing-climate-pollution/>>.

<sup>73</sup> Interagency Working Group on Social Cost of Greenhouse Gases, United States Government. Technical Support Document: Technical Update on the Social Cost of Carbon for Regulatory Impact Analysis—Under Executive Order 12866. August 2016. (Last accessed January 18, 2022.) [https://www.epa.gov/sites/default/files/2016-12/documents/sc\\_co2\\_tsd\\_august\\_2016.pdf](https://www.epa.gov/sites/default/files/2016-12/documents/sc_co2_tsd_august_2016.pdf).

<sup>74</sup> Interagency Working Group on Social Cost of Greenhouse Gases, United States Government. Addendum to Technical Support Document on Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866: Application of the Methodology to Estimate the Social Cost of Methane and the Social Cost of Nitrous Oxide. August 2016. (Last accessed January 18, 2022.) [https://www.epa.gov/sites/default/files/2016-12/documents/addendum\\_to\\_sc-ghg\\_tsd\\_august\\_2016.pdf](https://www.epa.gov/sites/default/files/2016-12/documents/addendum_to_sc-ghg_tsd_august_2016.pdf).

a. Social Cost of Carbon

The SC-CO<sub>2</sub> values used for this NOPR were generated using the values presented in the 2021 update from the IWG's February 2021 TSD. Table VI.24

shows the updated sets of SC-CO<sub>2</sub> estimates from the latest interagency update in 5-year increments from 2020 to 2050. The full set of annual values used is presented in Appendix 13A of the NOPR TSD. For purposes of

capturing the uncertainties involved in regulatory impact analysis, DOE has determined it is appropriate include all four sets of SC-CO<sub>2</sub> values, as recommended by the IWG.<sup>76</sup>

TABLE VI.24—ANNUAL SC-CO<sub>2</sub> VALUES FROM 2021 INTERAGENCY UPDATE, 2020–2050  
[2020\$ per metric ton CO<sub>2</sub>]

Year	Discount rate			
	5%	3%	2.5%	3%
	Average	Average	Average	95th percentile
2020	14	51	76	152
2025	17	56	83	169
2030	19	62	89	187
2035	22	67	96	206
2040	25	73	103	225
2045	28	79	110	242
2050	32	85	116	260

For 2051 to 2070, DOE used SC-CO<sub>2</sub> estimates published by EPA, adjusted to 2021\$.<sup>77</sup> These estimates are based on methods, assumptions, and parameters identical to the 2020–2050 estimates published by the IWG. DOE expects additional climate benefits to accrue for any longer-life GSLs after 2070, but a lack of available SC-CO<sub>2</sub> estimates for emissions years beyond 2070 prevents DOE from monetizing these potential benefits in this analysis. If further analysis of monetized climate benefits beyond 2070 becomes available prior to the publication of the final rule, DOE will include that analysis in the final rule.

DOE multiplied the CO<sub>2</sub> emissions reduction estimated for each year by the SC-CO<sub>2</sub> value for that year in each of the four cases. DOE adjusted the values to 2021\$ using the implicit price deflator for gross domestic product (GDP) from the Bureau of Economic Analysis. To calculate a present value of the stream of monetary values, DOE discounted the values in each of the four cases using the specific discount rate that had been used to obtain the SC-CO<sub>2</sub> values in each case.

b. Social Cost of Methane and Nitrous Oxide

The SC-CH<sub>4</sub> and SC-N<sub>2</sub>O values used for this NOPR were generated using the

values presented in the February 2021 TSD. Table VI.25 shows the updated sets of SC-CH<sub>4</sub> and SC-N<sub>2</sub>O estimates from the latest interagency update in 5-year increments from 2020 to 2050. The full set of annual values used is presented in Appendix 13A of the NOPR TSD. To capture the uncertainties involved in regulatory impact analysis, DOE has determined it is appropriate to include all four sets of SC-CH<sub>4</sub> and SC-N<sub>2</sub>O values, as recommended by the IWG. DOE derived values after 2050 using the approach described above for the SC-CO<sub>2</sub>.

TABLE VI.25—ANNUAL SC-CH<sub>4</sub> AND SC-N<sub>2</sub>O VALUES FROM 2021 INTERAGENCY UPDATE, 2020–2050  
[2020\$ per metric ton]

Year	SC-CH <sub>4</sub>				SC-N <sub>2</sub> O			
	Discount rate and statistic				Discount rate and statistic			
	5%	3%	2.5%	3%	5%	3%	2.5%	3%
	Average	Average	Average	95th percentile	Average	Average	Average	95th percentile
2020	670	1,500	2,000	3,900	5,800	18,000	27,000	48,000
2025	800	1,700	2,200	4,500	6,800	21,000	30,000	54,000
2030	940	2,000	2,500	5,200	7,800	23,000	33,000	60,000
2035	1,100	2,200	2,800	6,000	9,000	25,000	36,000	67,000
2040	1,300	2,500	3,100	6,700	10,000	28,000	39,000	74,000
2045	1,500	2,800	3,500	7,500	12,000	30,000	42,000	81,000
2050	1,700	3,100	3,800	8,200	13,000	33,000	45,000	88,000

<sup>76</sup>For example, the February 2021 TSD discusses how the understanding of discounting approaches suggests that discount rates appropriate for

intergenerational analysis in the context of climate change may be lower than 3 percent.

<sup>77</sup>See EPA, *Revised 2023 and Later Model Year Light-Duty Vehicle GHG Emissions Standards*:

*Regulatory Impact Analysis*, Washington, DC, December 2021. Available at: [www.epa.gov/system/files/documents/2021-12/420r21028.pdf](http://www.epa.gov/system/files/documents/2021-12/420r21028.pdf) (last accessed January 13, 2022).

DOE multiplied the CH<sub>4</sub> and N<sub>2</sub>O emissions reduction estimated for each year by the SC-CH<sub>4</sub> and SC-N<sub>2</sub>O estimates for that year in each of the cases. DOE adjusted the values to 2021\$ using the implicit price deflator for gross domestic product (GDP) from the Bureau of Economic Analysis. To calculate a present value of the stream of monetary values, DOE discounted the values in each of the cases using the specific discount rate that had been used to obtain the SC-CH<sub>4</sub> and SC-N<sub>2</sub>O estimates in each case.

## 2. Monetization of Other Air Pollutants

For the NOPR, DOE estimated the monetized value of NO<sub>x</sub> and SO<sub>2</sub> emissions reductions from electricity generation using the latest benefit per ton estimates for that sector from the EPA's Benefits Mapping and Analysis Program.<sup>78</sup> DOE used EPA's values for PM<sub>2.5</sub>-related benefits associated with NO<sub>x</sub> and SO<sub>2</sub> and for ozone-related benefits associated with NO<sub>x</sub> for 2025, 2030, 2035, and 2040, calculated with discount rates of 3 percent and 7 percent. DOE used linear interpolation to define values for the years not given in the 2025 to 2040 period; for years beyond 2040 the values are held constant. DOE derived values specific to the sector for GSLs using a method described in appendix 13B of the NOPR TSD.

DOE multiplied the site emissions reduction (in tons) in each year by the associated \$/ton values, and then discounted each series using discount rates of 3 percent and 7 percent as appropriate. Additional details on the monetization of NO<sub>x</sub> and SO<sub>2</sub> emissions reductions are included in chapter 13 of the NOPR TSD.

### M. Utility Impact Analysis

The utility impact analysis estimates the changes in installed electrical capacity and generation that would result for each considered TSL. The analysis is based on published output from the NEMS associated with AEO2022. NEMS produces the AEO Reference case, as well as a number of side cases that estimate the economy-wide impacts of changes to energy supply and demand. For the current analysis, impacts are quantified by comparing the levels of electricity sector generation, installed capacity, fuel consumption and emissions in the AEO2022 Reference case and various side cases. Details of the methodology

are provided in the appendices to chapters 12 and 14 of the NOPR TSD.

The output of this analysis is a set of time-dependent coefficients that capture the change in electricity generation, primary fuel consumption, installed capacity and power sector emissions due to a unit reduction in demand for a given end use. These coefficients are multiplied by the stream of electricity savings calculated in the NIA to provide estimates of selected utility impacts of potential new or amended energy conservation standards.

### N. Employment Impact Analysis

DOE considers employment impacts in the domestic economy as one factor in selecting a proposed standard. Employment impacts from new or amended energy conservation standards include both direct and indirect impacts. Direct employment impacts are any changes in the number of employees of manufacturers of the products subject to standards, their suppliers, and related service firms. The MIA addresses those impacts. Indirect employment impacts are changes in national employment that occur due to the shift in expenditures and capital investment caused by the purchase and operation of more-efficient appliances. Indirect employment impacts from standards consist of the net jobs created or eliminated in the national economy, other than in the manufacturing sector being regulated, caused by (1) reduced spending by consumers on energy, (2) reduced spending on new energy supply by the utility industry, (3) increased consumer spending on the products to which the new standards apply and other goods and services, and (4) the effects of those three factors throughout the economy.

One method for assessing the possible effects on the demand for labor of such shifts in economic activity is to compare sector employment statistics developed by the Labor Department's Bureau of Labor Statistics (BLS). BLS regularly publishes its estimates of the number of jobs per million dollars of economic activity in different sectors of the economy, as well as the jobs created elsewhere in the economy by this same economic activity. Data from BLS indicate that expenditures in the utility sector generally create fewer jobs (both directly and indirectly) than expenditures in other sectors of the economy.<sup>79</sup> There are many reasons for

these differences, including wage differences and the fact that the utility sector is more capital-intensive and less labor-intensive than other sectors. Energy conservation standards have the effect of reducing consumer utility bills. Because reduced consumer expenditures for energy likely lead to increased expenditures in other sectors of the economy, the general effect of efficiency standards is to shift economic activity from a less labor-intensive sector (*i.e.*, the utility sector) to more labor-intensive sectors (*e.g.*, the retail and service sectors). Thus, the BLS data suggest that net national employment may increase due to shifts in economic activity resulting from energy conservation standards.

DOE estimated indirect national employment impacts for the standard levels considered in this NOPR using an input/output model of the U.S. economy called Impact of Sector Energy Technologies version 4 (ImSET).<sup>80</sup> ImSET is a special-purpose version of the "U.S. Benchmark National Input-Output" (I-O) model, which was designed to estimate the national employment and income effects of energy-saving technologies. The ImSET software includes a computer-based I-O model having structural coefficients that characterize economic flows among 187 sectors most relevant to industrial, commercial, and residential building energy use.

DOE notes that ImSET is not a general equilibrium forecasting model, and that the uncertainties involved in projecting employment impacts, especially changes in the later years of the analysis. Because ImSET does not incorporate price changes, the employment effects predicted by ImSET may over-estimate actual job impacts over the long run for this proposed rule. Therefore, DOE used ImSET only to generate results for near-term timeframes (2029), where these uncertainties are reduced. For more details on the employment impact analysis, see chapter 15 of the NOPR TSD.

## VII. Analytical Results and Conclusions

The following section addresses the results from DOE's analyses with respect to the considered energy conservation standards for GSLs. It addresses the TSLs examined by DOE, the projected impacts of each of these

[apps.bea.gov/scb/pdf/regional/perinc/meth/rims2.pdf](https://apps.bea.gov/scb/pdf/regional/perinc/meth/rims2.pdf) (last accessed March 25, 2022).

<sup>80</sup> Livingston, O.V., S.R. Bender, M.J. Scott, and R.W. Schultz. *ImSET 4.0: Impact of Sector Energy Technologies Model Description and User Guide*. 2015. Pacific Northwest National Laboratory: Richland, WA. PNNL-24563.

<sup>78</sup> *Estimating the Benefit per Ton of Reducing PM<sub>2.5</sub> Precursors from 21 Sectors.* [www.epa.gov/benmap/estimating-benefit-ton-reducing-pm25-precursors-21-sectors](http://www.epa.gov/benmap/estimating-benefit-ton-reducing-pm25-precursors-21-sectors).

<sup>79</sup> See U.S. Department of Commerce—Bureau of Economic Analysis. *Regional Multipliers: A User Handbook for the Regional Input-Output Modeling System (RIMS II)*. 1997. U.S. Government Printing Office: Washington, DC. Available at <https://>

levels if adopted as energy conservation standards for GSLs, and the standards levels that DOE is proposing to adopt in this NOPR. Additional details regarding DOE’s analyses are contained in the NOPR TSD supporting this document.

*A. Trial Standard Levels*

In general, DOE typically evaluates potential amended standards for products and equipment by grouping individual efficiency levels for each class into TSLs. Use of TSLs allows DOE to identify and consider manufacturer cost interactions between the product classes, to the extent that there are such interactions, and market cross elasticity from consumer purchasing decisions that may change when different standard levels are set.

In the analysis conducted for this NOPR, DOE analyzed the benefits and burdens of six TSLs for GSLs. DOE developed TSLs that combine efficiency levels for each analyzed product class. These TSLs were developed by combining specific efficiency levels for each of the GSL product classes analyzed by DOE. TSL 1 represents a modest increase in efficiency, with CFL technology retained as an option for product classes that include fluorescent lamps, including the Integrated Omnidirectional Short and Non-integrated Omnidirectional product classes. TSL 2 represents a moderate standard level that can only be met by LED options for all product classes. TSL 3 increases the stringency for the

Integrated Omnidirectional Short, Integrated Omnidirectional Long and Integrated Directional product classes, and represents a significant increase in NES compared to TSLs 1 and 2. TSL 4 increases the proposed standard level for the Integrated Omnidirectional Short product class, as well as the expected NES. TSL 5 represents the maximum NPV. TSL 6 represents max tech. DOE presents the results for the TSLs in this document, while the results for all efficiency levels that DOE analyzed are in the NOPR TSD.

Table VII.1 presents the TSLs and the corresponding efficiency levels that DOE has identified for potential amended energy conservation standards for GSLs.

TABLE VII.1—TRIAL STANDARD LEVELS FOR GSLs BY EFFICACY LEVEL

TSL	Representative product class				
	Integrated omnidirectional short	Integrated omnidirectional long	Integrated directional	Non-integrated omnidirectional	Non-integrated directional
1 .....	EL 2	EL 1	EL 1	EL 1	EL 1
2 .....	EL 3	EL 3	EL 3	EL 3	EL 1
3 .....	EL 5	EL 5	EL 5	EL 3	EL 1
4 .....	EL 6	EL 5	EL 5	EL 3	EL 1
5 .....	EL 7	EL 5	EL 5	EL 3	EL 3
6 .....	EL 7	EL 6	EL 5	EL 3	EL 3

DOE constructed the TSLs for this NOPR to include ELs representative of ELs with similar characteristics (e.g., using similar technologies and/or efficiencies) or representing significant increases in efficiency and energy savings. The use of representative ELs provided for greater distinction between the TSLs. While representative ELs were included in the TSLs, DOE considered all efficiency levels as part of its analysis.<sup>81</sup>

*B. Economic Justification and Energy Savings*

1. Economic Impacts on Individual Consumers

DOE analyzed the economic impacts on GSL consumers by looking at the effects that potential standards at each TSL would have on the LCC and PBP. DOE also examined the impacts of

potential standards on selected consumer subgroups. These analyses are discussed in the following sections.

a. Life-Cycle Cost and Payback Period

In general, higher-efficiency products affect consumers in two ways: (1) purchase price increases and (2) annual operating costs decrease. Inputs used for calculating the LCC and PBP include total installed costs (i.e., product price plus installation costs), and operating costs (i.e., annual energy use, energy prices, energy price trends, repair costs, and maintenance costs). The LCC calculation also uses product lifetime and a discount rate. Chapter 7 of the NOPR TSD provides detailed information on the LCC and PBP analyses.

Table VII.2 through Table VII.11 show the LCC and PBP results for the TSLs

considered for each product class. In the first of each pair of tables, the simple payback is measured relative to the baseline product. In the second table, impacts are measured based on the changes in the efficacy distribution under a standard relative to the efficacy distribution in the no-new-standards case in the first full year of compliance (see section VI.F.9 of this document). Because some consumers purchase products with higher efficiency than the minimum allowed under a standard or in the no-new standards case, the average savings can differ from than the difference between the average LCC of the baseline product and the average LCC at each TSL. The savings refer only to consumers who are affected by a standard at a given TSL. Consumers for whom the LCC increases at a given TSL experience a net cost.

<sup>81</sup> Efficiency levels that were analyzed for this NOPR are discussed in section VI.C.5 of this

document. Results by efficiency level are presented in TSD chapters 7, 9, and 11.

TABLE VII.2—AVERAGE LCC AND PBP RESULTS FOR INTEGRATED OMNIDIRECTIONAL SHORT GSLS

Lamp option	EL	Average costs 2021\$					Simple payback (years)	Average lifetime (years)
		Installed cost	First year's operating cost	Lifetime operating cost*	Residual value	LCC		
<b>Residential</b>								
0 .....	0	3.24	3.90	6.84	0.00	10.07	.....	7.1
1 .....	1	3.38	3.64	6.38	0.00	9.76	0.5	7.1
2 .....	2	3.52	3.38	5.93	0.00	9.44	0.5	7.1
3 .....	3	2.85	2.60	4.56	1.25	6.15	0.0	11.9
4 .....	3	3.88	2.60	4.56	2.00	6.44	0.5	13.5
5 .....	4	3.49	2.34	4.10	1.54	6.06	0.2	11.9
6 .....	4	4.74	2.34	4.10	2.44	6.40	1.0	13.5
7 .....	5	4.13	2.08	3.65	1.82	5.96	0.5	11.9
8 .....	6	4.76	1.82	3.19	2.10	5.86	0.7	11.9
9 .....	7	5.08	1.69	2.96	2.24	5.81	0.8	11.9
<b>Commercial</b>								
0 .....	0	4.97	6.30	12.88	0.00	18.05	.....	2.8
1 .....	1	5.11	5.88	12.02	0.00	17.34	0.3	2.8
2 .....	2	5.25	5.46	11.16	0.00	16.62	0.3	2.8
3 .....	3	4.58	4.20	8.59	0.85	12.32	0.0	4.1
4 .....	3	5.61	4.20	8.59	2.07	12.13	0.3	6.7
5 .....	4	5.22	3.78	7.73	1.04	11.91	0.1	4.1
6 .....	4	6.48	3.78	7.73	2.53	11.68	0.6	6.7
7 .....	5	5.86	3.36	6.87	1.23	11.50	0.3	4.1
8 .....	6	6.49	2.94	6.01	1.42	11.09	0.5	4.1
9 .....	7	6.82	2.73	5.58	1.52	10.88	0.5	4.1

**Note:** The results for each lamp option represent the average value if all purchasers use products at that lamp option. The PBP is measured relative to the base-line (EL 0) product; therefore, the PBP is not defined for EL 0.  
 \* Calculated over the LCC analysis period, which is the lifetime of the EL 0 lamp.

TABLE VII.3—AVERAGE LCC SAVINGS RESULTS FOR INTEGRATED OMNIDIRECTIONAL SHORT GSLS

TSL	EL	Average LCC savings* (2021\$)	Percent of consumers that experience net cost
<b>Residential Sector</b>			
1 .....	2	1.89	0.9
2 .....	3	2.35	1.3
3 .....	5	0.51	19.9
4 .....	6	0.56	21.1
5-6 .....	7	0.59	22.0
<b>Commercial Sector</b>			
1 .....	2	2.32	0.2
2 .....	3	2.91	0.3
3 .....	5	0.82	5.6
4 .....	6	1.01	5.1
5-6 .....	7	1.11	4.8

\* The savings represent the average LCC for affected consumers.

TABLE VII.4—AVERAGE LCC AND PBP RESULTS FOR INTEGRATED OMNIDIRECTIONAL LONG GSLS

Lamp option	EL	Average costs 2021\$					Simple payback years	Average lifetime years
		Installed cost	First year's operating cost	Lifetime operating cost*	Residual value	LCC		
<b>Residential</b>								
0 .....	0	8.11	2.39	22.07	0.00	30.18	.....	17.4
1 .....	1	9.05	2.23	20.60	0.00	29.65	5.9	17.4
2 .....	2	10.31	2.00	18.39	0.00	28.70	5.5	17.4
3 .....	3	10.21	1.92	17.65	0.00	27.87	4.4	17.4
4 .....	4	11.10	1.84	16.92	0.00	28.02	5.4	17.4
5 .....	5	11.70	1.68	15.45	0.00	27.14	5.0	17.4
6 .....	6	13.11	1.47	13.54	0.00	26.64	5.4	17.4
<b>Commercial</b>								
0 .....	0	9.84	4.51	34.58	0.00	44.42	.....	13.8

TABLE VII.4—AVERAGE LCC AND PBP RESULTS FOR INTEGRATED OMNIDIRECTIONAL LONG GSLS—Continued

Lamp option	EL	Average costs 2021\$					Simple payback years	Average lifetime years
		Installed cost	First year's operating cost	Lifetime operating cost*	Residual value	LCC		
1 .....	1	10.78	4.21	32.28	0.00	43.06	3.1	13.8
2 .....	2	12.04	3.75	28.82	0.00	40.86	2.9	13.8
3 .....	3	11.95	3.60	27.67	0.00	39.61	2.3	13.8
4 .....	4	12.83	3.45	26.51	0.00	39.34	2.8	13.8
5 .....	5	13.43	3.15	24.21	0.00	37.64	2.7	13.8
6 .....	6	14.84	2.76	21.21	0.00	36.05	2.9	13.8

**Note:** The results for each lamp option represent the average value if all purchasers use products at that lamp option. The PBP is measured relative to the base-line (EL 0) product; therefore, the PBP is not defined for EL 0.

\* Calculated over the LCC analysis period, which is the lifetime of the EL 0 lamp.

TABLE VII.5—AVERAGE LCC SAVINGS RESULTS FOR INTEGRATED OMNIDIRECTIONAL LONG GSLS

TSL	EL	Average LCC savings* (2021\$)	Percent of consumers that experience net cost
<b>Residential Sector</b>			
1 .....	1	0.59	21.1
2 .....	3	1.02	39.0
3-5 .....	5	1.57	41.7
6 .....	6	1.82	43.4
<b>Commercial Sector</b>			
1 .....	1	1.42	2.8
2 .....	3	2.37	3.8
3-5 .....	5	3.80	1.9
6 .....	6	4.74	2.3

\* The savings represent the average LCC for affected consumers.

TABLE VII.6—AVERAGE LCC AND PBP RESULTS FOR INTEGRATED DIRECTIONAL GSLS

Lamp option	EL	Average costs (2021\$)					Simple payback (years)	Average lifetime (years)
		Installed cost	First year's operating cost	Lifetime operating cost*	Residual value	LCC		
<b>Residential</b>								
0 .....	0	17.13	6.52	11.70	0.00	28.83	.....	7.3
1 .....	1	11.25	4.82	8.65	5.67	14.23	0.0	13.5
2 .....	2	10.42	4.53	8.14	5.25	13.31	0.0	13.5
3 .....	3	9.61	4.25	7.63	4.84	12.40	0.0	13.5
4 .....	4	8.69	3.97	7.12	4.38	11.43	0.0	13.5
5 .....	5	7.11	3.54	6.36	3.58	9.88	0.0	13.5
<b>Commercial</b>								
0 .....	0	18.87	9.76	19.96	0.00	39.03	.....	2.8
1 .....	1	12.99	7.22	14.75	5.97	21.77	0.0	6.8
2 .....	2	12.15	6.79	13.88	5.53	20.51	0.0	6.8
3 .....	3	11.35	6.37	13.02	5.10	19.26	0.0	6.8
4 .....	4	10.43	5.94	12.15	4.61	17.96	0.0	6.8
5 .....	5	8.84	5.31	10.85	3.77	15.92	0.0	6.8

**Note:** The results for each lamp option represent the average value if all purchasers use products at that lamp option. The PBP is measured relative to the base-line (EL 0) product; therefore, the PBP is not defined for EL 0.

\* Calculated over the LCC analysis period, which is the lifetime of the EL 0 lamp.

TABLE VII.7—AVERAGE LCC SAVINGS RESULTS FOR INTEGRATED DIRECTIONAL GSLS

TSL	EL	Average LCC savings* (2021\$)	Percent of consumers that experience net cost
<b>Residential Sector</b>			
1 .....	1	8.87	0.0
2 .....	3	1.61	0.0
3-6 .....	5	3.01	0.0



TABLE VII.7—AVERAGE LCC SAVINGS RESULTS FOR INTEGRATED DIRECTIONAL GSLS—Continued

TSL	EL	Average LCC savings* (2021\$)	Percent of consumers that experience net cost
<b>Commercial Sector</b>			
1 .....	1	9.44	0.0
2 .....	3	2.01	0.0
3–6 .....	5	3.86	0.0

\* The savings represent the average LCC for affected consumers.

TABLE VII.8—AVERAGE LCC AND PBP RESULTS FOR NON-INTEGRATED OMNIDIRECTIONAL GSLS

Lamp option	EL	Average costs (2021\$)					Simple payback** (years)	Average lifetime (years)
		Installed cost	First year's operating cost	Lifetime operating cost*	Residual value	LCC		
<b>Commercial</b>								
0 .....	0	7.11	10.74	22.56	0.00	29.87	.....	3.0
1 .....	1	9.88	10.74	22.56	0.00	32.64	Never	3.0
2 .....	1	20.71	8.68	18.22	6.50	32.62	6.6	4.7
3 .....	2	20.93	4.96	10.41	13.05	18.29	2.4	11.9
4 .....	3	21.79	3.72	7.81	13.64	15.96	2.1	11.9

**Note:** The results for each lamp option represent the average value if all purchasers use products at that lamp option. The PBP is measured relative to the base-line (EL 0) product; therefore, the PBP is not defined for EL 0.

\* Calculated over the LCC analysis period, which is the lifetime of the EL 0 lamp.

\*\* A reported PBP of "Never" indicates that the increased purchase cost will never be recouped by operating cost savings.

TABLE VII.9—AVERAGE LCC SAVINGS RESULTS FOR NON-INTEGRATED OMNIDIRECTIONAL GSLS

TSL	EL	Average LCC savings* (2021\$)	Percent of consumers that experience net cost
<b>Residential Sector</b>			
1 .....	1	4.93	9.4%
2–6 .....	3	6.62	0.2%

\* The savings represent the average LCC for affected consumers.

TABLE VII.10—AVERAGE LCC AND PBP RESULTS FOR NON-INTEGRATED DIRECTIONAL GSLS

Lamp option	EL	Average costs (2021\$)					Simply payback (years)	Average lifetime (years)
		Installed cost	First year's operating cost	Lifetime operating cost*	Residual value	LCC		
<b>Residential</b>								
0 .....	0	8.47	2.24	12.66	0.00	21.13	.....	13.4
1 .....	1	9.34	1.96	11.08	0.00	20.41	3.1	13.4
2 .....	2	10.10	1.82	10.29	0.00	20.38	3.9	13.4
3 .....	3	10.82	1.68	9.49	0.00	20.32	4.2	13.4
<b>Commercial</b>								
0 .....	0	10.20	3.38	15.07	0.00	25.27	.....	6.8
1 .....	1	11.07	2.96	13.19	0.00	24.26	2.1	6.8
2 .....	2	11.83	2.75	12.25	0.00	24.08	2.6	6.8
3 .....	3	12.56	2.53	11.30	0.00	23.86	2.8	6.8

**Note:** The results for each lamp option represent the average value if all purchasers use products at that lamp option. The PBP is measured relative to the base-line (EL 0) product; therefore, the PBP is not defined for EL 0.

\* Calculated over the LCC analysis period, which is the lifetime of the EL 0 lamp.

TABLE VII.11—AVERAGE LCC SAVINGS RESULTS FOR NON-INTEGRATED DIRECTIONAL GSLS

TSL	EL	Average LCC savings* (2021\$)	Percent of consumers that experience net cost
<b>Residential Sector</b>			
1-4 .....	1	0.34	22.2
5-6 .....	3	0.28	34.6
<b>Commercial Sector</b>			
1-4 .....	1	0.59	9.0
5-6 .....	3	0.69	16.5

\* The savings represent the average LCC for affected consumers.

b. Consumer Subgroup Analysis

In the consumer subgroup analysis, DOE estimated the impact of the considered TSLs on low-income households and small businesses. Table

VII.12 and Table VII.13 compare the average LCC savings and PBP at each efficiency level for the consumer subgroups with similar metrics for the entire consumer sample for GSLS. In most cases, the average LCC savings and

PBP for low-income households and small businesses do not substantially differ from the average for all consumers. Chapter 10 of the NOPR TSD presents the complete LCC and PBP results for the subgroups.

TABLE VII.12—COMPARISON OF LCC SAVINGS FOR CONSUMER SUBGROUPS AND ALL CONSUMERS

TSL	Average LCC savings* (2021\$)			
	Residential		Commercial	
	Low-income households	All households	Small businesses	All businesses
<b>Integrated Omnidirectional Short</b>				
1 .....	1.94	1.89	2.22	2.32
2 .....	2.57	2.35	2.78	2.91
3 .....	0.53	0.51	0.77	0.82
4 .....	0.59	0.56	0.94	1.01
5-6 .....	0.62	0.59	1.03	1.11
<b>Integrated Omnidirectional Long</b>				
1 .....	N/A**	0.59	1.15	1.42
2 .....		1.02	1.94	2.37
3-5 .....		1.57	3.08	3.80
6 .....		1.82	3.81	4.74
<b>Integrated Directional</b>				
1 .....	9.61	8.87	9.22	9.44
2 .....	1.66	1.61	1.98	2.01
3-6 .....	3.03	3.01	3.82	3.86
<b>Non-integrated Omnidirectional</b>				
1 .....	N/A		4.54	4.93
2-6 .....			6.20	6.62
<b>Non-integrated Directional</b>				
1-4 .....	0.33	0.34	0.48	0.59
5-6 .....	0.27	0.28	0.52	0.69

\* The savings represent the average LCC for affected consumers.

\*\* Approximately 95% of Integrated Omnidirectional Long GSLS are shipped to the commercial sector. Moreover, for those low-income consumers who are renters (a subset of the residential consumer subgroup), DOE anticipates that the landlord, rather than the tenant, would typically purchase the lamps because Integrated Omnidirectional Long GSLS are not typical screw-in bulbs. For these reasons, DOE provides results for this PC only for the commercial sector.

TABLE VII.13—COMPARISON OF PBP FOR CONSUMER SUBGROUPS AND ALL CONSUMERS

Lamp option	Simple payback period* (years)			
	Residential		Commercial	
	Low-income households	All households	Small businesses	All businesses
<b>Integrated Omnidirectional Short</b>				
1 .....	0.5	0.5	0.3	0.3
2 .....	0.5	0.5	0.3	0.3
3 .....	0.0	0.0	0.0	0.0
4 .....	0.5	0.5	0.3	0.3
5 .....	0.2	0.2	0.1	0.1
6 .....	0.9	1.0	0.6	0.6
7 .....	0.5	0.5	0.3	0.3
8 .....	0.7	0.7	0.5	0.5
9 .....	0.8	0.8	0.5	0.5
<b>Integrated Omnidirectional Long</b>				
1 .....	N/A **	5.9	3.2	3.1
2 .....		5.5	3.0	2.9
3 .....		4.4	2.4	2.3
4 .....		5.4	2.9	2.8
5 .....		5.0	2.7	2.7
6 .....		5.4	2.9	2.9
<b>Integrated Directional</b>				
1 .....	0.0	0.0	0.0	0.0
2 .....	0.0	0.0	0.0	0.0
3 .....	0.0	0.0	0.0	0.0
4 .....	0.0	0.0	0.0	0.0
5 .....	0.0	0.0	0.0	0.0
<b>Non-integrated Omnidirectional</b>				
1 .....	N/A		Never	Never
2 .....			6.7	6.6
3 .....			2.4	2.4
4 .....			2.1	2.1
<b>Non-integrated Directional</b>				
1 .....	3.1	3.1	2.1	2.1
2 .....	3.9	3.9	2.6	2.6
3 .....	4.3	4.2	2.8	2.8

\* A reported PBP of “Never” indicates that the increased purchase cost will never be recouped by operating cost savings.

\*\* Approximately 95% of Integrated Omnidirectional Long GSLs are shipped to the commercial sector. Moreover, for those low-income consumers who are renters (a subset of the residential consumer subgroup), DOE anticipates that the landlord, rather than the tenant, would typically purchase the lamps because Integrated Omnidirectional Long GSLs are not typical screw-in bulbs. For these reasons, DOE provides results for this PC only for the commercial sector.

c. Rebuttable Presumption Payback

As discussed in section VI.F.11, EPCA establishes a rebuttable presumption that an energy conservation standard is economically justified if the increased purchase cost for a product that meets the standard is less than three times the value of the first-year energy savings resulting from the standard. In calculating a rebuttable presumption payback period for each of the considered TSLs, DOE used discrete

values, and, as required by EPCA, based the energy use calculation on the DOE test procedure for GSLs. In contrast, the PBPs presented in section VII.B.1.a of this document were calculated using distributions that reflect the range of energy use in the field.

Table VII.14 presents the rebuttable-presumption payback periods for the considered TSLs for GSLs. While DOE examined the rebuttable-presumption criterion, it considered whether the standard levels considered for the NOPR

are economically justified through a more detailed analysis of the economic impacts of those levels, pursuant to 42 U.S.C. 6295(o)(2)(B)(i), that considers the full range of impacts to the consumer, manufacturer, Nation, and environment. The results of that analysis serve as the basis for DOE to definitively evaluate the economic justification for a potential standard level, thereby supporting or rebutting the results of any preliminary determination of economic justification.

TABLE VII.14—REBUTTABLE-PRESUMPTION PAYBACK PERIODS

Lamp option	Rebuttable PBP* (years)				
	Integrated omnidirectional short	Integrated omnidirectional long	Integrated directional	Non-integrated omnidirectional	Non-integrated directional
<b>Residential</b>					
1 .....	0.5	5.9	0.0	.....	3.0
2 .....	0.5	5.5	0.0	.....	3.8
3 .....	0.0	4.4	0.0	.....	4.1
4 .....	0.5	5.4	0.0	.....	.....
5 .....	0.2	5.0	0.0	.....	.....
6 .....	0.9	5.4	.....	.....	.....
7 .....	0.5	.....	.....	.....	.....
8 .....	0.7	.....	.....	.....	.....
9 .....	0.8	.....	.....	.....	.....
<b>Commercial</b>					
1 .....	0.3	2.8	0.0	Never	1.8
2 .....	0.3	2.6	0.0	5.9	2.3
3 .....	0.0	2.1	0.0	2.1	2.5
4 .....	0.3	2.6	0.0	1.9	.....
5 .....	0.1	2.4	0.0	.....	.....
6 .....	0.5	2.6	.....	.....	.....
7 .....	0.3	.....	.....	.....	.....
8 .....	0.4	.....	.....	.....	.....
9 .....	0.5	.....	.....	.....	.....

\* A reported PBP of "Never" indicates that the increased purchase cost will never be recouped by operating cost savings.

2. Economic Impacts on Manufacturers

DOE performed an MIA to estimate the impact of new and amended energy conservation standards on manufacturers of GSLs. The following section describes the expected impacts on manufacturers at each considered TSL. Chapter 11 of the NOPR TSD explains the analysis in further detail.

a. Industry Cash Flow Analysis Results

In this section, DOE provides GRIM results from the analysis, which examines changes in the industry that would result from new and amended standards. The following tables summarize the estimated financial impacts (represented by changes in INPV) of new and amended energy conservation standards on manufacturers of GSLs, as well as the conversion costs that DOE estimates manufacturers of GSLs would incur at each TSL.

To evaluate the range of cash flow impacts on the GSL industry, DOE modeled two manufacturer markup scenarios that correspond to the range of

possible market responses to new and amended standards. Each manufacturer markup scenario results in a unique set of cash flows and corresponding INPVs at each TSL.

In the following discussion, the INPV results refer to the difference in industry value between the no-new-standards case and the standards cases that result from the sum of discounted cash flows from the reference year (2022) through the end of the analysis period (2058). The results also discuss the difference in cash flows between the no-new-standards case and the standards cases in the year before the estimated compliance date for new and amended energy conservation standards. This figure represents the size of the required conversion costs relative to the cash flow generated by the GSL industry in the absence of new and amended energy conservation standards.

To assess the upper (less severe) end of the range of potential impacts on GSL manufacturers, DOE modeled a preservation of gross margin scenario. This scenario assumes that in the

standards cases, GSL manufacturers would be able to pass along all the higher production costs required for more efficacious products to their consumers. Specifically, the industry would be able to maintain its average no-new-standards case gross margin (as a percentage of revenue) despite the higher production costs in the standards cases. In general, the larger the product price increases, the less likely manufacturers are to achieve the cash flow from operations calculated in this scenario because it is less likely that manufacturers would be able to fully markup these larger production cost increases.

To assess the lower (more severe) end of the range of potential impacts on the GSL manufacturers, DOE modeled a preservation of operating profit scenario. This scenario represents the lower end of the range of impacts on manufacturers because no additional operating profit is earned on the higher production costs, eroding profit margins as a percentage of total revenue.

TABLE VII.15—MANUFACTURER IMPACT ANALYSIS FOR GENERAL SERVICE LAMPS—PRESERVATION OF GROSS MARGIN SCENARIO

	Units	No-new-standards case	Trial standard level					
			1	2	3	4	5	6
INPV .....	2021\$ millions .....	2,014	1,968	1,874	1,868	1,873	1,868	1,867

TABLE VII.15—MANUFACTURER IMPACT ANALYSIS FOR GENERAL SERVICE LAMPS—PRESERVATION OF GROSS MARGIN SCENARIO—Continued

	Units	No-new-standards case	Trial standard level					
			1	2	3	4	5	6
Change in INPV .....	2021\$ millions .....	.....	(46)	(139)	(144)	(139)	(144)	(145)
	% .....	.....	(2.3)	(6.9)	(7.1)	(6.9)	(7.2)	(7.2)
Total Conversion Costs .....	2021\$ millions .....	.....	82	220	337	373	403	407

\* Numbers in parentheses indicate negative numbers.

TABLE VII.16—MANUFACTURER IMPACT ANALYSIS FOR GENERAL SERVICE LAMPS—PRESERVATION OF OPERATING PROFIT SCENARIO

	Units	No-new-standards case	Trial standard level					
			1	2	3	4	5	6
INPV .....	2021\$ millions .....	2,014	1,964	1,880	1,838	1,821	1,745	1,741
Change in INPV .....	2021\$ millions .....	.....	(50)	(134)	(174)	(190)	(266)	(271)
	% .....	.....	(2.5)	(6.6)	(8.6)	(9.5)	(13.2)	(13.5)
Total Conversion Costs .....	2021\$ millions .....	.....	82	220	337	373	403	407

\* Numbers in parentheses indicate negative numbers.

TSL 1 sets the efficacy level at EL 2 for the Integrated Omnidirectional Short product class and EL 1 for all other product classes (Integrated Omnidirectional Long, Integrated Directional, Non-Integrated Omnidirectional, Non-Integrated Directional). At TSL 1, DOE estimates impacts on INPV would range from –\$50 million to –\$46 million, or a change in INPV of –2.5 percent to –2.3 percent. At TSL 1, industry free cash flow (operating cash flow minus capital expenditures) is estimated to decrease to \$74 million, or a drop of 28 percent, compared to the no-new-standards case value of \$103 million in 2028, the year leading up to the estimated compliance date of new and amended energy conservation standards.

Percentage impacts on INPV are slightly negative at TSL 1. DOE estimates that approximately 99 percent of the Integrated Omnidirectional Short and Integrated Directional product class shipments; 86 percent of the Integrated Omnidirectional Long product class shipments; 98 percent of the Non-Integrated Omnidirectional Short product class shipments; and 74 percent of the Non-Integrated Directional product class shipments will meet or exceed the ELs required at TSL 1 in 2029, the estimated first full year of compliance of new and amended standards.

DOE does not expect manufacturers to incur any capital conversion costs at TSL 1. At TSL 1, additional LED lamp production capacity is not expected to be needed to meet the expected volume of LED lamp shipments, as GSL manufacturers are expected to produce

more LED lamps for every product class in years leading up to 2029 than in 2029, the estimated first full year of compliance of new and amended standards. DOE estimates approximately \$82 million in product conversion costs as some LED lamps may need to be remodeled to meet ELs required at TSL 1. DOE does not estimate any conversion costs for CFL models as GSL manufacturers are not expected to remodel non-compliant CFLs, even though that may be possible for some CFLs at TSL 1.

At TSL 1, under the preservation of gross margin scenario, the shipment weighted-average MPC increases slightly by approximately 0.8 percent relative to the no-new-standards case MPC. This slight price increase is outweighed by the \$82 million in conversion costs estimated at TSL 1, resulting in slightly negative INPV impacts at TSL 1 under the preservation of gross margin scenario.

Under the preservation of operating profit scenario, manufacturers earn the same nominal operating profit as would be earned in the no-new-standards case, but manufacturers do not earn additional profit from their investments. The slight increase in the shipment weighted-average MPC results in a slightly lower average manufacturer markup (slightly smaller than the 1.55 manufacturer markup used in the no-new-standards case). This slightly lower average manufacturer markup and the \$82 million in conversion costs result in slightly negative INPV impacts at TSL 1 under the preservation of operating profit scenario.

TSL 2 sets the efficacy level at EL 1 for the Non-Integrated Directional product class and EL 3 for all other product classes (Integrated Omnidirectional Short, Integrated Omnidirectional Long, Integrated Directional, Non-Integrated Omnidirectional). At TSL 2, DOE estimates impacts on INPV would range from –\$134 million to –\$139 million, or a change in INPV of –6.6 percent to –6.9 percent. At TSL 2, industry free cash flow is estimated to decrease to \$25 million, or a drop of 76 percent, compared to the no-new-standards case value of \$103 million in 2028, the year leading up to the estimated compliance date of new and amended energy conservation standards.

Percentage impacts on INPV are moderately negative at TSL 2. DOE estimates that approximately 98 percent of the Integrated Omnidirectional Short product class shipments; 58 percent of the Integrated Omnidirectional Long product class shipments; 73 percent of the Integrated Directional product class shipments; 55 percent of the Non-Integrated Omnidirectional Short product class shipments; and 74 percent of the Non-Integrated Directional product class shipments will meet or exceed the ELs required at TSL 2 in 2029, the estimated first full year of compliance of new and amended standards.

DOE does not expect manufacturers to incur any capital conversion costs at TSL 2. At TSL 2, additional LED lamp production capacity is not expected to be needed to meet the expected volume of LED lamp shipments, as GSL manufacturers are expected to produce

more LED lamps for every product class in years leading up to 2029 than in 2029, the estimated first full year of compliance of new and amended standards. DOE estimates approximately \$220 million in product conversion costs as some LED lamps may need to be re-modeled to meet ELs required at TSL 2. DOE does not estimate any conversion costs for CFL models as GSL manufacturers are expected to discontinue all CFLs for any standard level beyond TSL 1.

At TSL 2, under the preservation of gross margin scenario, the shipment weighted-average MPC increases slightly by approximately 0.1 percent relative to the no-new-standards case MPC. This slight price increase is outweighed by the \$220 million in conversion costs estimated at TSL 2, resulting in moderately negative INPV impacts at TSL 2 under the preservation of gross margin scenario.

Under the preservation of operating profit scenario, the slight increase in the shipment weighted-average MPC results in a slightly lower average manufacturer markup (slightly smaller than the 1.55 manufacturer markup used in the no-new-standards case). This slightly lower average manufacturer markup and the \$220 million in conversion costs result in moderately negative INPV impacts at TSL 2 under the preservation of operating profit scenario.

TSL 3 sets the efficacy level at EL 1 for the Non-Integrated Directional product class; at EL 3 for the Non-Integrated Omnidirectional Short product class, which is “max-tech” for the Non-Integrated Omnidirectional Short product class; and at EL 5 for all other product classes (Integrated Omnidirectional Short, Integrated Omnidirectional Long, Integrated Directional), EL 5 is “max-tech” for the Integrated Directional product class. At TSL 3, DOE estimates impacts on INPV would range from  $-\$174$  million to  $-\$144$  million, or a change in INPV of approximately  $-8.6$  percent to  $-7.1$  percent. At TSL 3, industry free cash flow is estimated to decrease to  $-\$26$  million, or a drop of 126 percent, compared to the no-new-standards case value of  $\$103$  million in 2028, the year leading up to the estimated compliance date of new and amended energy conservation standards.

Percentage impacts on INPV are moderately negative at TSL 3. DOE estimates that approximately 45 percent of the Integrated Omnidirectional Short product class shipments; 29 percent of the Integrated Omnidirectional Long product class shipments; 34 percent of the Integrated Directional product class shipments; 55 percent of the Non-

Integrated Omnidirectional Short product class shipments; and 74 percent of the Non-Integrated Directional product class shipments will meet or exceed the ELs required at TSL 3 in 2029, the estimated first full year of compliance of new and amended standards.

DOE does not expect manufacturers to incur any capital conversion costs at TSL 3. At TSL 3, additional LED lamp production capacity is not expected to be needed to meet the expected volume of LED lamp shipments, as GSL manufacturers are expected to produce more LED lamps for every product class in the years leading up to 2029 than in 2029, the estimated first full year of compliance of new and amended standards. DOE estimates approximately  $\$337$  million in product conversion costs as many LED lamps may need to be re-modeled to meet ELs required at TSL 3.

At TSL 3, under the preservation of gross margin scenario, the shipment weighted-average MPC increases moderately by approximately 6.4 percent relative to the no-new-standards case MPC. This moderate price increase is outweighed by the  $\$337$  million in conversion costs estimated at TSL 3, resulting in moderately negative INPV impacts at TSL 3 under the preservation of gross margin scenario.

Under the preservation of operating profit scenario, the moderate increase in the shipment weighted-average MPC results in a slightly lower average manufacturer markup (slightly smaller than the 1.55 manufacturer markup used in the no-new-standards case). This slightly lower average manufacturer markup and the  $\$337$  million in conversion costs result in moderately negative INPV impacts at TSL 3 under the preservation of operating profit scenario.

TSL 4 sets the efficacy level at EL 1 for the Non-Integrated Directional product class; at EL 3 for the Non-Integrated Omnidirectional Short product class, which is “max-tech” for the Non-Integrated Omnidirectional Short product class; at EL 5 for the Integrated Omnidirectional Long and Integrated Directional product classes, which is “max-tech” for the Integrated Directional product class; and at EL 6 for the Integrated Omnidirectional Short product class. At TSL 4, DOE estimates impacts on INPV would range from  $-\$190$  million to  $-\$139$  million, or a change in INPV of  $-9.5$  percent to  $-6.9$  percent. At TSL 4, industry free cash flow is estimated to decrease to  $-\$42$  million, or a drop of 141 percent, compared to the no-new-standards case value of  $\$103$  million in 2028, the year

leading up to the estimated compliance date of new and amended energy conservation standards.

Percentage impacts on INPV are moderately negative at TSL 4. DOE estimates that approximately 31 percent of the Integrated Omnidirectional Short product class shipments; 29 percent of the Integrated Omnidirectional Long product class shipments; 34 percent of the Integrated Directional product class shipments; 55 percent of the Non-Integrated Omnidirectional Short product class shipments; and 74 percent of the Non-Integrated Directional product class shipments will meet or exceed the ELs required at TSL 4 in 2029, the estimated first full year of compliance of new and amended standards.

DOE does not expect manufacturers to incur any capital conversion costs at TSL 4. At TSL 4, additional LED lamp production capacity is not expected to be needed to meet the expected volume of LED lamp shipments, as GSL manufacturers are expected to produce more LED lamps for every product class in the years leading up to 2029 than in 2029, the estimated first full year of compliance of new and amended standards. DOE estimates approximately  $\$373$  million in product conversion costs as many LED lamps may need to be re-modeled to meet ELs required at TSL 4. DOE does not estimate any conversion costs for CFL models as GSL manufacturers are expected to discontinue all CFLs for any standard level beyond TSL 1.

At TSL 4, under the preservation of gross margin scenario, the shipment weighted-average MPC increases moderately by approximately 10.2 percent relative to the no-new-standards case MPC. This moderate price increase is outweighed by the  $\$373$  million in conversion costs estimated at TSL 4, resulting in moderately negative INPV impacts at TSL 4 under the preservation of gross margin scenario.

Under the preservation of operating profit scenario, the moderate increase in the shipment weighted-average MPC results in a slightly lower average manufacturer markup of 1.54 (compared to the 1.55 manufacturer markup used in the no-new-standards case). This slightly lower average manufacturer markup and the  $\$373$  million in conversion costs result in moderately negative INPV impacts at TSL 4 under the preservation of operating profit scenario.

TSL 5 sets the efficacy level at EL 3 for the Non-Integrated Omnidirectional Short and Non-Integrated Directional product classes, which is “max-tech” for those product classes; at EL 5 for the

Integrated Omnidirectional Long and Integrated Directional product classes, which is “max-tech” for the Integrated Directional product class; and at EL 7 for the Integrated Omnidirectional Short product class, which is “max-tech” for this product class. At TSL 5, DOE estimates impacts on INPV would range from –\$266 million to –\$144 million, or a change in INPV of –13.2 percent to –7.2 percent. At TSL 5, industry free cash flow is estimated to decrease to –\$56 million, or a drop of 154 percent, compared to the no-new-standards case value of \$103 million in 2028, the year leading up to the estimated compliance date of new and amended energy conservation standards.

Percentage impacts on INPV are moderately negative at TSL 5. DOE estimates that approximately 17 percent of the Integrated Omnidirectional Short product class shipments; 29 percent of the Integrated Omnidirectional Long product class shipments; 34 percent of the Integrated Directional product class shipments; 55 percent of the Non-Integrated Omnidirectional Short product class shipments; and 27 percent of the Non-Integrated Directional product class shipments will meet or exceed the ELs required at TSL 5 in 2029, the estimated first full year of compliance of new and amended standards.

DOE does not expect manufacturers to incur any capital conversion costs at TSL 5. At TSL 5, additional LED lamp production capacity is not expected to be needed to meet the expected volume of LED lamp shipments, as GSL manufacturers are expected to produce more LED lamps for every product class in the years leading up to 2029 than in 2029, the estimated first full year of compliance of new and amended standards. DOE estimates approximately \$403 million in product conversion costs as many LED lamps may need to be re-modeled to meet ELs required at TSL 5. DOE does not estimate any conversion costs for CFL models as GSL manufacturers are expected to discontinue all CFLs for any standard level beyond TSL 1.

At TSL 5, under the preservation of gross margin scenario, the shipment weighted-average MPC increases moderately by approximately 12.5 percent relative to the no-new-standards case MPC. This moderate price increase is outweighed by the \$403 million in conversion costs estimated at TSL 5, resulting in moderately negative INPV impacts at TSL 5 under the preservation of gross margin scenario.

Under the preservation of operating profit scenario, the moderate increase in the shipment weighted-average MPC

results in a slightly lower average manufacturer markup of 1.53 (compared to the 1.55 manufacturer markup used in the no-new-standards case). This slightly lower average manufacturer markup and the \$403 million in conversion costs result in moderately negative INPV impacts at TSL 5 under the preservation of operating profit scenario.

TSL 6 sets the efficacy level at EL 3 for the Non-Integrated Omnidirectional Short and Non-Integrated Directional product classes, which is “max-tech” for those product classes; at EL 5 for the Integrated Directional product class, which is “max-tech”; at EL 6 for the Integrated Omnidirectional Long product classes, which is “max-tech”; and at EL 7 for the Integrated Omnidirectional Short product class, which is “max-tech”. At TSL 6, DOE estimates impacts on INPV would range from –\$271 million to –\$145 million, or a change in INPV of –13.5 percent to –7.2 percent. At TSL 6, industry free cash flow is estimated to decrease to –\$58 million, or a drop of 156 percent, compared to the no-new-standards case value of \$103 million in 2028, the year leading up to the estimated compliance date of new and amended energy conservation standards.

Percentage impacts on INPV are moderately negative at TSL 6. DOE estimates that approximately 17 percent of the Integrated Omnidirectional Short product class shipments; approximately 14 percent of the Integrated Omnidirectional Long product class shipments; 34 percent of the Integrated Directional product class shipments; 55 percent of the Non-Integrated Omnidirectional Short product class shipments; and 27 percent of the Non-Integrated Directional product class shipments will meet the ELs required at TSL 6 in 2029, the estimated first full year of compliance of new and amended standards.

DOE does not expect manufacturers to incur any capital conversion costs at TSL 6. At TSL 6, additional LED lamp production capacity is not expected to be needed to meet the expected volume of LED lamp shipments, as GSL manufacturers are expected to produce more LED lamps for every product class in the years leading up to 2029 than in 2029, the estimated first full year of compliance of new and amended standards. DOE estimates approximately \$407 million in product conversion costs as most LED lamps may need to be re-modeled to meet ELs required at TSL 6. DOE does not estimate any conversion costs for CFL models as GSL manufacturers are expected to

discontinue all CFLs for any standard level beyond TSL 1.

At TSL 6, under the preservation of gross margin scenario, the shipment weighted-average MPC increases moderately by approximately 12.7 percent relative to the no-new-standards case MPC. This moderate price increase is outweighed by the \$407 million in conversion costs estimated at TSL 6, resulting in moderately negative INPV impacts at TSL 6 under the preservation of gross margin scenario.

Under the preservation of operating profit scenario, the moderate increase in the shipment weighted-average MPC results in a slightly lower average manufacturer markup of 1.53 (compared to the 1.55 manufacturer markup used in the no-new-standards case). This slightly lower average manufacturer markup and the \$407 million in conversion costs result in moderately negative INPV impacts at TSL 6 under the preservation of operating profit scenario.

#### b. Direct Impacts on Employment

Based on previous manufacturer interviews and public comments from GSL rulemaking documents previously published, DOE determined that there are no GSL manufacturers that manufacture CFLs in the United States, as all CFLs sold in the United States are manufactured abroad. Some of these CFL manufacturing facilities are owned by the GSL manufacturer and others outsource their CFL production to original equipment manufacturers located primarily in Asia. However, several GSL manufacturers that sell CFLs in the United States have domestic employees responsible for the R&D, marketing, sales, and distribution of CFLs.

In the March 2016 NOPR, DOE estimated that there would be approximately 100 domestic employees dedicated to the non-production aspects of CFLs in 2020, the estimated compliance year of the March 2016 NOPR analysis.<sup>82</sup> Due to the ongoing decline in CFL shipments since the March 2016 NOPR, the shipments analysis for this NOPR projects that CFL shipments will decline by more than two-thirds between 2020, the estimated compliance year of the March 2016 NOPR, and 2029, the estimated first full year of compliance in this NOPR analysis. Therefore, in this NOPR analysis, DOE estimated that in the no-new-standards case there could be approximately 30 domestic employees dedicated to the non-production aspects of CFLs in 2029, the estimated first full

<sup>82</sup> 81 FR 14528, 14609.

year of compliance for this NOPR analysis.<sup>83</sup> For this NOPR analysis, DOE estimates GSL manufacturers selling CFLs in the U. S. could reduce or eliminate up to 30 domestic non-production employees if CFLs are not able to meet the adopted new and amended standards.<sup>84</sup>

While most LED lamp manufacturing is done abroad, there is a limited number of LED lamps and LED lamp components covered by this rulemaking that are manufactured domestically. DOE assumed that all GSL manufacturers selling LED lamps in the U.S. would not reduce or eliminate any domestic production or non-production employees involved in manufacturing or selling LED lamps due to any of the analyzed TSLs in this NOPR. DOE did not estimate the potential increase in domestic production employment due to energy conservation standards, as existing domestic LED lamp manufacturing represents a small portion of LED lamp manufacturing overall and would not necessarily increase as LED lamp sales increase.

DOE seeks comment on the assumption that there are no GSL manufacturers manufacturing CFLs in the United States. Additionally, DOE requests comment on the assumption that up to 30 domestic non-production employees are involved in the R&D, marketing, sales, and distribution of CFLs in the United States, which may be eliminated if energy conservation standards are set at TSL 2 or higher. Lastly, DOE seeks comment on the assumption that GSL manufacturers would not reduce or eliminate any domestic production or non-production employees involved in manufacturing or selling LED lamps due to any of the analyzed TSLs in this NOPR. *See* section IX.E for a list of issues on which DOE seeks comment.

#### c. Impacts on Manufacturing Capacity

Based on the NOPR shipments analysis, the quantity of LED lamps sold for all product classes reaches approximately 751 million in 2022 and then declines to approximately 397 million by 2029, the estimated first full year of compliance for this NOPR analysis, in the no-new-standards case.

<sup>83</sup> DOE assumed the number of domestic non-production employees scales with the number of CFL shipments. Therefore, a two-third reduction in CFL shipments between 2020 and 2029, would cause a two-third reduction in domestic non-production employees.

<sup>84</sup> DOE assumed most, if not all, CFLs would not be able to meet standards if energy conservation standards are set at TSL 2 or higher. The majority of CFLs projected to be sold in 2029 (the estimated compliance year) are in the Integrated Omnidirectional-Short product class.

This represents a decrease of approximately 47 percent from 2022 to 2029. Based on the NOPR shipments analysis, while all TSLs project an increase in number of LED lamps sold in 2029 (in the standards cases) compared to the no-new standards case, the number of LED lamps sold in 2029 (for all TSLs), is smaller than the number of LED lamps sold in the years leading up to 2029. Therefore, DOE assumed that GSL manufacturers would be able to maintain their 2028 LED lamp production capacity in 2029 and manufactures would be able to meet the LED lamp production capacity for all TSLs in 2029.

DOE does not anticipate that manufacturing the same, or slightly fewer, quantity of LED lamps that are more efficacious would impact the production capacity for LED manufacturers.

#### d. Impacts on Subgroups of Manufacturers

Using average cost assumptions to develop an industry cash-flow estimate may not be adequate for assessing differential impacts among manufacturer subgroups. Small manufacturers, niche manufacturers, and manufacturers exhibiting a cost structure substantially different from the industry average could be affected disproportionately. DOE used the results of the industry characterization to group manufacturers exhibiting similar characteristics. Consequently, DOE identified small business manufacturers as a subgroup for a separate impact analysis.

For the small business subgroup analysis, DOE applied the small business size standards published by the Small Business Administration (SBA) to determine whether a company is considered a small business. The size standards are codified at 13 CFR part 121. To be categorized as a small business under North American Industry Classification System (NAICS) code 335139, “electric lamp bulb and other lighting equipment manufacturing” a GSL manufacturer and its affiliates may employ a maximum of 1,250 employees. The 1,250-employee threshold includes all employees in a business’s parent company and any other subsidiaries. DOE identified more than 300 GSL manufacturers that qualify as small businesses.

The small business subgroup analysis is discussed in more detail in section VIII.B and in chapter 11 of the NOPR TSD.

#### e. Cumulative Regulatory Burden

One aspect of assessing manufacturer burden involves looking at the cumulative impact of multiple DOE standards and the product-specific regulatory actions of other Federal agencies that affect the manufacturers of a covered product or equipment. While any one regulation may not impose a significant burden on manufacturers, the combined effects of several existing or impending regulations may have serious consequences for some manufacturers, groups of manufacturers, or an entire industry. In the cumulative regulatory burden (CRB) analysis, DOE considers burdens associated with meeting other Federal, product-specific regulations that occur within the CRB timeframe. The CRB timeframe is the seven-year period that covers the three years before the compliance year, the compliance year, and the three years after the compliance year of the proposed standard.

DOE acknowledges that most GSL manufacturers also make other lighting products that are subject to energy conservation standards set by DOE. Thus, DOE assesses regulations that could affect GSL manufacturers that will take effect three years prior to and three years after the estimated compliance date of any new GSL standards. For this analysis, DOE was not able to identify any potential energy conservation standard for other products or equipment manufactured by GSL manufacturers that is scheduled to require compliance between 2025 and 2031. However, DOE has ongoing rulemakings for other products that GSL manufacturers produce that could result in amended energy conservation standards. These rulemakings include ceiling fans<sup>85</sup> and ceiling fan light kits.<sup>86</sup> If DOE proposes or finalizes any energy conservation standards for these products prior to finalizing energy conservation standards for GSLs, DOE will include the energy conservation standards for these other products as part of the cumulative regulatory burden for the GSL final rule.

DOE requests information regarding the impact of cumulative regulatory burden on manufacturers of GSLs associated with multiple DOE standards or product-specific regulatory actions of other Federal agencies, specifically if these standards occur within three years prior to and after 2028. *See* section IX.E for a list of issues on which DOE seeks comment.

<sup>85</sup> [www.regulations.gov/docket/EERE-2021-BT-STD-0011](http://www.regulations.gov/docket/EERE-2021-BT-STD-0011).

<sup>86</sup> [www.regulations.gov/docket/EERE-2019-BT-STD-0040](http://www.regulations.gov/docket/EERE-2019-BT-STD-0040).



3. National Impact Analysis

This section presents DOE’s estimates of the national energy savings and the NPV of consumer benefits that would result from each of the TSLs considered as potential amended standards.

a. Significance of Energy Savings

To estimate the energy savings attributable to potential amended standards for GSLs, DOE compared their energy consumption under the no-new-standards case to their anticipated energy consumption under each TSL. The savings are measured over the entire lifetime of products purchased in

the 30-year period that begins in the first full year of anticipated compliance with amended standards (2029–2058). Table VII.17 presents DOE’s projections of the national energy savings for each TSL considered for GSLs. The savings were calculated using the approach described in section VI.H of this document.

TABLE VII.17—CUMULATIVE NATIONAL ENERGY SAVINGS FOR GSLs; 30 YEARS OF SHIPMENTS (2029–2058)

	Product class	Trial standard level					
		1	2	3	4	5	6
		quads					
Primary Energy Savings .....	Integrated Omnidirectional Short ..	0.095	0.136	2.336	2.859	3.114	3.114
	Integrated Omnidirectional Long ..	0.050	0.113	0.185	0.185	0.185	0.205
	Integrated Directional .....	0.004	0.235	0.490	0.490	0.490	0.490
	Non-integrated Omnidirectional ....	0.000	0.003	0.003	0.003	0.003	0.003
	Non-integrated Directional .....	0.009	0.009	0.009	0.009	0.020	0.020
	Total .....	0.159	0.496	3.024	3.546	3.812	3.832
FFC Energy Savings .....	Integrated Omnidirectional Short ..	0.099	0.141	2.427	2.970	3.236	3.236
	Integrated Omnidirectional Long ..	0.052	0.117	0.192	0.192	0.192	0.213
	Integrated Directional .....	0.005	0.244	0.510	0.510	0.510	0.510
	Non-integrated Omnidirectional ....	0.000	0.003	0.003	0.003	0.003	0.003
	Non-integrated Directional .....	0.010	0.010	0.010	0.010	0.021	0.021
	Total .....	0.165	0.515	3.141	3.684	3.961	3.981

OMB Circular A–4<sup>87</sup> requires agencies to present analytical results, including separate schedules of the monetized benefits and costs that show the type and timing of benefits and costs. Circular A–4 also directs agencies to consider the variability of key elements underlying the estimates of benefits and costs. For this rulemaking, DOE undertook a sensitivity analysis

using 9 years, rather than 30 years, of product shipments. The choice of a 9-year period is a proxy for the timeline in EPCA for the review of certain energy conservation standards and potential revision of and compliance with such revised standards.<sup>88</sup> The review timeframe established in EPCA is generally not synchronized with the product lifetime, product manufacturing

cycles, or other factors specific to GSLs. Thus, such results are presented for informational purposes only and are not indicative of any change in DOE’s analytical methodology. The NES sensitivity analysis results based on a 9-year analytical period are presented in Table VII.18. The impacts are counted over the lifetime of GSLs purchased in 2029–2037.

TABLE VII.18—CUMULATIVE NATIONAL ENERGY SAVINGS FOR GSLs; 9 YEARS OF SHIPMENTS (2029–2037)

	Product class	Trial standard level					
		1	2	3	4	5	6
		quads					
Primary Energy Savings .....	Integrated Omnidirectional Short ..	0.029	0.041	0.343	0.724	0.891	0.981
	Integrated Omnidirectional Long ..	0.025	0.055	0.086	0.086	0.086	0.087
	Integrated Directional .....	0.001	0.061	0.134	0.134	0.134	0.134
	Non-integrated Omnidirectional ....	0.000	0.003	0.003	0.003	0.003	0.003
	Non-integrated Directional .....	0.003	0.003	0.003	0.003	0.003	0.008
	Total .....	0.059	0.163	0.569	0.950	1.117	1.213
FFC Energy Savings .....	Integrated Omnidirectional Short ..	0.030	0.043	0.356	0.752	0.926	1.020
	Integrated Omnidirectional Long ..	0.026	0.058	0.090	0.090	0.090	0.090
	Integrated Directional .....	0.001	0.063	0.139	0.139	0.139	0.139
	Non-integrated Omnidirectional ....	0.000	0.003	0.003	0.003	0.003	0.003
	Non-integrated Directional .....	0.004	0.004	0.004	0.004	0.004	0.008

<sup>87</sup> U.S. Office of Management and Budget. *Circular A–4: Regulatory Analysis*. September 17, 2003. [https://www.whitehouse.gov/wp-content/uploads/legacy\\_drupal\\_files/omb/circulars/A4/a-4.pdf](https://www.whitehouse.gov/wp-content/uploads/legacy_drupal_files/omb/circulars/A4/a-4.pdf) (last accessed March 25, 2022).

<sup>88</sup> Section 325(m) of EPCA requires DOE to review its standards at least once every 6 years, and

requires, for certain products, a 3-year period after any new standard is promulgated before compliance is required, except that in no case may any new standards be required within 6 years of the compliance date of the previous standards. While adding a 6-year review to the 3-year compliance period adds up to 9 years, DOE notes that it may

undertake reviews at any time within the 6 year period and that the 3-year compliance date may yield to the 6-year backstop. A 9-year analysis period may not be appropriate given the variability that occurs in the timing of standards reviews and the fact that for some products, the compliance period is 5 years rather than 3 years.

TABLE VII.18—CUMULATIVE NATIONAL ENERGY SAVINGS FOR GSLs; 9 YEARS OF SHIPMENTS (2029–2037)—Continued

	Product class	Trial standard level					
		1	2	3	4	5	6
		quads					
	Total .....	0.061	0.170	0.592	0.988	1.162	1.260

b. Net Present Value of Consumer Costs and Benefits

DOE estimated the cumulative NPV of the total costs and savings for

consumers that would result from the TSLs considered for GSLs. In accordance with OMB’s guidelines on regulatory analysis,<sup>89</sup> DOE calculated NPV using both a 7-percent and a 3-

percent real discount rate. Table VII.19 shows the consumer NPV results with impacts counted over the lifetime of products purchased in 2029–2058.

TABLE VII.19—CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR GSLs; 30 YEARS OF SHIPMENTS (2029–2058)

Discount rate	Product class	Trial standard level					
		1	2	3	4	5	6
		Billion \$2021					
3 percent .....	Integrated Omnidirectional Short ..	0.731	1.062	11.622	13.969	15.141	15.141
	Integrated Omnidirectional Long ..	0.179	0.369	0.523	0.523	0.523	0.415
	Integrated Directional .....	0.065	2.213	4.737	4.737	4.737	4.737
	Non-integrated Omnidirectional ....	0.001	0.017	0.017	0.017	0.017	0.017
	Non-integrated Directional .....	0.034	0.034	0.035	0.035	0.063	0.063
	Total .....	1.010	3.694	16.937	19.283	20.483	20.373
7 percent .....	Integrated Omnidirectional Short ..	0.296	0.431	4.031	4.810	5.208	5.208
	Integrated Omnidirectional Long ..	0.074	0.143	0.179	0.179	0.179	0.081
	Integrated Directional .....	0.029	0.908	1.976	1.976	1.976	1.976
	Non-integrated Omnidirectional ....	0.001	0.009	0.009	0.009	0.009	0.009
	Non-integrated Directional .....	0.011	0.011	0.012	0.012	0.018	0.018
	Total .....	0.411	1.503	6.207	6.986	7.391	7.294

The NPV results based on the aforementioned 9-year analytical period are presented in Table VII.20. The impacts are counted over the lifetime of

products purchased in 2029–2037. As mentioned previously, such results are presented for informational purposes only and are not indicative of any

change in DOE’s analytical methodology or decision criteria.

TABLE VII.20 CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR GSLs; 9 YEARS OF SHIPMENTS (2029–2037)

Discount rate	Product class	Trial standard level					
		1	2	3	4	5	6
		Billion \$2021					
3 percent .....	Integrated Omnidirectional Short ..	0.270	0.391	2.218	4.772	5.708	6.216
	Integrated Omnidirectional Long ..	0.104	0.205	0.266	0.266	0.266	0.157
	Integrated Directional .....	0.023	0.769	1.731	1.731	1.731	1.731
	Non-integrated Omnidirectional ....	0.001	0.017	0.017	0.017	0.017	0.017
	Non-integrated Directional .....	0.015	0.015	0.015	0.015	0.015	0.028
	Total .....	0.414	1.397	4.246	6.801	7.738	8.149
7 percent .....	Integrated Omnidirectional Short ..	0.143	0.207	1.017	2.196	2.596	2.814
	Integrated Omnidirectional Long ..	0.050	0.092	0.102	0.102	0.102	0.015
	Integrated Directional .....	0.014	0.424	0.960	0.960	0.960	0.960
	Non-integrated Omnidirectional ....	0.001	0.009	0.009	0.009	0.009	0.009
	Non-integrated Directional .....	0.006	0.006	0.006	0.006	0.006	0.010
	Total .....	0.214	0.739	2.095	3.273	3.674	3.809

<sup>89</sup> U.S. Office of Management and Budget. Circular A–4: Regulatory Analysis. September 17,

2003. [https://www.whitehouse.gov/wp-content/](https://www.whitehouse.gov/wp-content/uploads/legacy_drupal_files/omb/circulars/A4/a-4.pdf)

[uploads/legacy\\_drupal\\_files/omb/circulars/A4/a-4.pdf](https://www.whitehouse.gov/wp-content/uploads/legacy_drupal_files/omb/circulars/A4/a-4.pdf) (last accessed March 25, 2022).

The previous results reflect the use of a default trend to estimate the change in price for GSLs over the analysis period (see section VI.G, VI.H of this document). As part of the NIA, DOE also analyzed a high and low benefits scenarios that use inputs from variants of the *AEO 2022* Reference case. For the high benefits scenario, DOE uses the *AEO 2022* High Economic Growth scenario, which has a higher energy price trend relative to the Reference case, as well as a lower price learning rate. The lower learning rate in this scenario slows down the adoption of more efficacious lamp options in the no-new-standards case, increasing the available energy savings attributable to a standard. For the low benefits scenario, DOE uses the *AEO 2022* Low Economic Growth scenario, which has a lower energy price trend relative to the Reference case, as well as a higher price learning rate. The higher learning rate in this scenario accelerates the adoption of more efficacious lamp options in the no-new-standards case (relative to the reference scenario) decreasing the available energy savings attributable to a standard. NIA results based on these cases are presented in appendix 9C of the NOPR TSD.

c. Indirect Impacts on Employment

It is estimated that amended energy conservation standards for GSLs would reduce energy expenditures for consumers of those products, with the resulting net savings being redirected to other forms of economic activity. These expected shifts in spending and economic activity could affect the demand for labor. As described in section VI.M of this document, DOE used an input/output model of the U.S. economy to estimate indirect employment impacts of the TSLs that

DOE considered. There are uncertainties involved in projecting employment impacts, especially changes in the later years of the analysis. Therefore, DOE generated results for near-term timeframes (2029–2032), where these uncertainties are reduced.

The results suggest that the proposed standards would be likely to have a negligible impact on the net demand for labor in the economy. The net change in jobs is so small that it would be imperceptible in national labor statistics and might be offset by other, unanticipated effects on employment. Chapter 15 of the NOPR TSD presents detailed results regarding anticipated indirect employment impacts.

4. Impact on Utility or Performance of Products

As discussed in section IV.C.1.b of this document, DOE has tentatively concluded that the standards proposed in this NOPR would not lessen the utility or performance of GSLs under consideration in this rulemaking. Manufacturers of these products currently offer units that meet or exceed the proposed standards.

5. Impact of Any Lessening of Competition

DOE considered any lessening of competition that would be likely to result from new or amended standards. As discussed in section III.E.1.e the Attorney General determines the impact, if any, of any lessening of competition likely to result from a proposed standard, and transmits such determination in writing to the Secretary, together with an analysis of the nature and extent of such impact. To assist the Attorney General in making this determination, DOE has provided DOJ with copies of this NOPR and the accompanying TSD for review. DOE will

consider DOJ’s comments on the proposed rule in determining whether to proceed to a final rule. DOE will publish and respond to DOJ’s comments in that document. DOE invites comment from the public regarding the competitive impacts that are likely to result from this proposed rule. In addition, stakeholders may also provide comments separately to DOJ regarding these potential impacts. See the **ADDRESSES** section for information to send comments to DOJ.

6. Need of the Nation To Conserve Energy

Enhanced energy efficiency, where economically justified, improves the Nation’s energy security, strengthens the economy, and reduces the environmental impacts (costs) of energy production. Reduced electricity demand due to energy conservation standards is also likely to reduce the cost of maintaining the reliability of the electricity system, particularly during peak-load periods. Chapter 14 in the NOPR TSD presents the estimated impacts on electricity generating capacity, relative to the no-new-standards case, for the TSLs that DOE considered in this rulemaking.

Energy conservation resulting from potential energy conservation standards for GSLs is expected to yield environmental benefits in the form of reduced emissions of certain air pollutants and greenhouse gases. Table VII.21 provides DOE’s estimate of cumulative emissions reductions expected to result from the TSLs considered in this rulemaking. The emissions were calculated using the multipliers discussed in section VI.K. DOE reports annual emissions reductions for each TSL in chapter 12 of the NOPR TSD.

TABLE VII.21—CUMULATIVE EMISSIONS REDUCTION FOR GSLS SHIPPED IN 2029–2058

	Trial standard level					
	1	2	3	4	5	6
<b>Power Sector Emissions</b>						
CO <sub>2</sub> (million metric tons) .....	5.07	15.72	95.56	112.20	120.70	121.21
SO <sub>2</sub> (thousand tons) .....	2.41	7.54	46.19	54.31	58.44	58.63
NO <sub>x</sub> (thousand tons) .....	2.55	7.83	47.36	55.66	59.91	60.11
Hg (tons) .....	0.02	0.05	0.31	0.36	0.39	0.40
CH <sub>4</sub> (thousand tons) .....	0.39	1.22	7.43	8.73	9.40	9.43
N <sub>2</sub> O (thousand tons) .....	0.066	0.17	1.04	1.22	1.31	1.32
<b>Upstream Emissions</b>						
CO <sub>2</sub> (million metric tons) .....	0.39	1.22	7.44	8.72	9.389	9.43
SO <sub>2</sub> (thousand tons) .....	0.03	0.08	0.50	0.59	0.64	0.65
NO <sub>x</sub> (thousand tons) .....	5.96	18.55	112.89	132.30	142.22	142.94
Hg (tons) .....	0.00	0.00	0.00	0.00	0.00	0.00
CH <sub>4</sub> (thousand tons) .....	37.19	115.79	705.02	826.81	888.80	893.33

TABLE VII.21—CUMULATIVE EMISSIONS REDUCTION FOR GSLs SHIPPED IN 2029–2058—Continued

	Trial standard level					
	1	2	3	4	5	6
N <sub>2</sub> O (thousand tons) .....	0.00	0.01	0.04	0.04	0.05	0.05
<b>Total FFC Emissions</b>						
CO <sub>2</sub> (million metric tons) .....	5.46	16.95	103.011	120.92	130.08	130.63
SO <sub>2</sub> (thousand tons) .....	2.44	7.62	46.70	54.90	59.08	59.27
NO <sub>x</sub> (thousand tons) .....	8.50	26.36	160.17	187.96	202.13	203.05
Hg (tons) .....	0.02	0.05	0.31	0.36	0.39	0.39
CH <sub>4</sub> (thousand tons) .....	37.58	117.01	712.45	835.54	898.21	902.76
N <sub>2</sub> O (thousand tons) .....	0.06	0.18	1.08	1.26	1.36	1.36

As part of the analysis for this rulemaking, DOE estimated monetary benefits likely to result from the reduced emissions of CO<sub>2</sub> that DOE estimated for each of the considered

TSLs for GSLs. Section VI.L of this document discusses the SC–CO<sub>2</sub> values that DOE used. Table VII.22 presents the value of CO<sub>2</sub> emissions reduction at each TSL for each of the SC–CO<sub>2</sub> cases.

The time-series of annual values is presented for the proposed TSL in chapter 13 of the NOPR TSD.

TABLE VII.22—PRESENT VALUE OF CO<sub>2</sub> EMISSIONS REDUCTION FOR GSLs SHIPPED IN 2029–2058

TSL	SC–CO <sub>2</sub> Case discount rate and statistics			
	5% Average	3% Average	2.5% Average	3% 95th percentile
	Billion 2021\$			
1 .....	0.05	0.21	0.33	0.65
2 .....	0.14	0.64	1.01	1.94
3 .....	0.84	3.76	5.94	11.40
4 .....	0.99	4.42	7.00	13.42
5 .....	1.07	4.77	7.54	14.47
6 .....	1.07	4.79	7.57	14.52

As discussed in section VI.L.2, DOE estimated monetary benefits likely to result from the reduced emissions of methane and N<sub>2</sub>O that DOE estimated

for each of the considered TSLs for GSLs. Table VII.23 presents the value of the CH<sub>4</sub> emissions reduction at each TSL, and Table VII.24 presents the value

of the N<sub>2</sub>O emissions reduction at each TSL. The time-series of annual values is presented for the proposed TSL in chapter 13 of the NOPR TSD.

TABLE VII.23—PRESENT VALUE OF METHANE EMISSIONS REDUCTION FOR GSLs SHIPPED IN 2029–2058

TSL	SC–CH <sub>4</sub> Case discount rate and statistics			
	5% Average	3% Average	2.5% Average	3% 95th percentile
	Billion 2021\$			
1 .....	0.02	0.05	0.07	0.12
2 .....	0.05	0.14	0.20	0.38
3 .....	0.27	0.84	1.19	2.23
4 .....	0.32	0.99	1.40	2.62
5 .....	0.34	1.07	1.51	2.83
6 .....	0.34	1.07	1.51	2.84

TABLE VII.24—PRESENT VALUE OF NITROUS OXIDE EMISSIONS REDUCTION FOR GSLs SHIPPED IN 2029–2058

TSL	SC–N <sub>2</sub> O Case discount rate and statistics			
	5% Average	3% Average	2.5% Average	3% 95th percentile
	Billion 2021\$			
1 .....	0.00	0.00	0.00	0.00
2 .....	0.00	0.00	0.00	0.01
3 .....	0.00	0.01	0.02	0.04

TABLE VII.24—PRESENT VALUE OF NITROUS OXIDE EMISSIONS REDUCTION FOR GSLs SHIPPED IN 2029–2058—Continued

TSL	SC–N <sub>2</sub> O Case discount rate and statistics			
	5% Average	3% Average	2.5% Average	3% 95th percentile
	Billion 2021\$			
4 .....	0.00	0.02	0.03	0.04
5 .....	0.00	0.02	0.03	0.05
6 .....	0.00	0.02	0.03	0.05

DOE is well aware that scientific and economic knowledge about the contribution of CO<sub>2</sub> and other GHG emissions to changes in the future global climate and the potential resulting damages to the world economy continues to evolve rapidly. Thus, any value placed on reduced GHG emissions in this rulemaking is subject to change. That said, because of omitted damages, DOE agrees with the IWG that these estimates most likely underestimate the climate benefits of greenhouse gas reductions. DOE, together with other Federal agencies, will continue to

review methodologies for estimating the monetary value of reductions in CO<sub>2</sub> and other GHG emissions. This ongoing review will consider the comments on this subject that are part of the public record for this and other rulemakings, as well as other methodological assumptions and issues. DOE notes that the proposed standards would be economically justified even without inclusion of monetized benefits of reduced GHG emissions.

DOE also estimated the monetary value of the health benefits associated with NO<sub>x</sub> and SO<sub>2</sub> emissions reductions anticipated to result from the

considered TSLs for GSLs. The dollar-per-ton values that DOE used are discussed in section VI.L.2 of this document. Table VII.25 presents the present value for NO<sub>x</sub> emissions reduction for each TSL calculated using 7-percent and 3-percent discount rates, and Table VII.26 presents similar results for SO<sub>2</sub> emissions reductions. The results in these tables reflect application of EPA’s low dollar-per-ton values, which DOE used to be conservative. The time-series of annual values is presented for the proposed TSL in chapter 13 of the NOPR TSD.

TABLE VII.25—PRESENT VALUE OF NO<sub>x</sub> EMISSIONS REDUCTION FOR GSLs SHIPPED IN 2029–2058

TSL	3% Discount rate	7% Discount rate
	Million 2021\$	
1 .....	128.52	328.95
2 .....	361.78	977.41
3 .....	1,999.29	5,694.00
4 .....	2,364.15	6,705.13
5 .....	2,558.94	7,231.34
6 .....	2,556.26	7,254.16

TABLE VII.26—PRESENT VALUE OF SO<sub>2</sub> EMISSIONS REDUCTION FOR GSLs SHIPPED IN 2029–2058

TSL	3% Discount rate	7% Discount rate
	Million 2021\$	
1 .....	50.32	127.15
2 .....	142.19	380.10
3 .....	793.83	2,235.21
4 .....	940.53	2,636.87
5 .....	1,018.93	2,846.03
6 .....	1,016.18	2,850.98

DOE has not considered the monetary benefits of the reduction of Hg for this NOPR. Not all the public health and environmental benefits from the reduction of greenhouse gases, NO<sub>x</sub>, and SO<sub>2</sub> are captured in the values above, and additional unquantified benefits from the reductions of those pollutants as well as from the reduction

of Hg, direct PM, and other co-pollutants may be significant.

DOE emphasizes that the emissions analysis, including the SC–GHG analysis, presented in this NOPR and TSD was performed in support of the cost-benefit analyses required by Executive Order 12866, and is provided to inform the public of the impacts of

emissions reductions resulting from this each TSL considered.

7. Other Factors

The Secretary of Energy, in determining whether a standard is economically justified, may consider any other factors that the Secretary deems to be relevant. (42 U.S.C.

6295(o)(2)(B)(i)(VII) No other factors were considered in this analysis.

8. Summary of Economic Impacts

Table VII.27 presents the NPV values that result from adding the monetized estimates of the potential economic, climate, and health benefits resulting from reduced GHG, SO<sub>2</sub>, and NO<sub>x</sub> emissions to the NPV of consumer

benefits calculated for each TSL considered in this rulemaking. The consumer benefits are domestic U.S. monetary savings that occur as a result of purchasing the covered GSLs, and are measured for the lifetime of products shipped in 2029–2058. The climate benefits associated with reduced GHG emissions resulting from the adopted standards are global benefits, and are

also calculated based on the lifetime of GSLs shipped in 2029–2058. The climate benefits associated with four SC–GHG estimates are shown. DOE does not have a single central SC–GHG point estimate and it emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates.

TABLE VII.27—CONSUMER NPV COMBINED WITH MONETIZED CLIMATE AND HEALTH BENEFITS FROM EMISSIONS REDUCTIONS  
[Billions 2021\$]

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5	TSL 6
<b>3% discount rate for NPV of Consumer and Health Benefits (billion 2021\$)</b>						
5% d.r., Average SC–GHG case .....	1.53	5.24	25.98	29.94	31.97	31.90
3% d.r., Average SC–GHG case .....	1.73	5.84	29.48	34.06	36.42	36.36
2.5% d.r., Average SC–GHG case .....	1.87	6.26	32.02	37.05	39.64	39.59
3% d.r., 95th percentile SC–GHG case .....	2.24	7.38	38.53	44.72	47.91	47.89
<b>7% discount rate for NPV of Consumer and Health Benefits (billion 2021\$)</b>						
5% d.r., Average SC–GHG case .....	0.65	2.20	10.11	11.60	12.38	12.28
3% d.r., Average SC–GHG case .....	0.85	2.79	13.62	15.72	16.83	16.74
2.5% d.r., Average SC–GHG case .....	0.99	3.22	16.16	18.71	20.05	19.98
3% d.r., 95th percentile SC–GHG case .....	1.37	4.33	22.67	26.38	28.32	28.28

C. Conclusion

When considering new or amended energy conservation standards, the standards that DOE adopts for any type (or class) of covered product must be designed to achieve the maximum improvement in energy efficiency that the Secretary determines is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A)) In determining whether a standard is economically justified, the Secretary must determine whether the benefits of the standard exceed its burdens by, to the greatest extent practicable, considering the seven statutory factors discussed previously. (42 U.S.C. 6295(o)(2)(B)(i)) The new or amended standard must also result in significant conservation of energy. (42 U.S.C. 6295(o)(3)(B))

For this NOPR, DOE considered the impacts of amended standards for GSLs at each TSL, beginning with the maximum technologically feasible level, to determine whether that level was economically justified and resulted in the maximum improvement in energy efficiency. Where the max-tech level was not economically justified or did not result in the maximum improvement in energy efficiency, DOE then considered the next most efficient level and undertook the same evaluation until it reached the efficiency level that represented the maximum improvement in energy efficiency that is

technologically feasible and economically justified and saves a significant amount of energy. DOE refers to this process as the “walk-down” analysis.

To aid the reader as DOE discusses the benefits and/or burdens of each TSL, tables in this section present a summary of the results of DOE’s quantitative analysis for each TSL. In addition to the quantitative results presented in the tables, DOE also considers other burdens and benefits that affect economic justification. These include the impacts on identifiable subgroups of consumers who may be disproportionately affected by a national standard and impacts on employment.

DOE also notes that the economics literature provides a wide-ranging discussion of how consumers trade off upfront costs and energy savings in the absence of government intervention. Much of this literature attempts to explain why consumers appear to undervalue energy efficiency improvements. There is evidence that consumers undervalue future energy savings as a result of (1) a lack of information, (2) a lack of sufficient salience of the long-term or aggregate benefits, (3) a lack of sufficient savings to warrant delaying or altering purchases, (4) excessive focus on the short term, in the form of inconsistent weighting of future energy cost savings relative to available returns on other investments, (5) computational or other

difficulties associated with the evaluation of relevant tradeoffs, and (6) a divergence in incentives (for example, between renters and owners, or builders and purchasers). Having less than perfect foresight and a high degree of uncertainty about the future, consumers may trade off these types of investments at a higher than expected rate between current consumption and uncertain future energy cost savings.

In DOE’s current regulatory analysis, potential changes in the benefits and costs of a regulation due to changes in consumer purchase decisions are included in two ways. First, if consumers forego the purchase of a product in the standards case, this decreases sales for product manufacturers, and the impact on manufacturers attributed to lost revenue is included in the MIA. Second, DOE accounts for energy savings attributable only to products actually used by consumers in the standards case; if a standard decreases the number of products purchased by consumers, this decreases the potential energy savings from an energy conservation standard. DOE provides estimates of shipments and changes in the volume of product purchases in chapter 8 of the NOPR TSD. However, DOE’s current analysis does not explicitly control for heterogeneity in consumer preferences, preferences across subcategories of products or specific features, or

consumer price sensitivity variation according to household income.<sup>90</sup>

While DOE is not prepared at present to provide a fuller quantifiable framework for estimating the benefits and costs of changes in consumer purchase decisions due to an energy conservation standard, DOE is committed to developing a framework that can support empirical quantitative tools for improved assessment of the consumer welfare impacts of appliance standards. DOE has posted a paper that discusses the issue of consumer welfare impacts of appliance energy conservation standards, and potential enhancements to the methodology by

which these impacts are defined and estimated in the regulatory process.<sup>91</sup> DOE welcomes comments on how to more fully assess the potential impact of energy conservation standards on consumer choice and how to quantify this impact in its regulatory analysis in future rulemakings.

1. Benefits and Burdens of TSLs Considered for GSLs Standards

Table VII.28 and Table VII.29 summarize the quantitative impacts estimated for each TSL for GSLs. The national impacts are measured over the lifetime of GSLs purchased in the 30-year period that begins in the anticipated first full year of compliance

with amended standards 2029–2058. The energy savings, emissions reductions, and value of emissions reductions refer to full-fuel-cycle results. DOE exercises its own judgment in presenting monetized climate benefits as recommended in applicable Executive Orders and DOE would reach the same conclusion presented in this rulemaking in the absence of the social cost of greenhouse gases, including the February 2021 Interim Estimates presented by the Interagency Working Group on the Social Cost of Greenhouse Gases. The efficiency levels contained in each TSL are described in section VII.A of this document.

TABLE VII.28—SUMMARY OF ANALYTICAL RESULTS FOR GSL TSLs: NATIONAL IMPACTS

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5	TSL 6
<b>Cumulative FFC National Energy Savings</b>						
Quads .....	0.17	0.52	3.14	3.68	3.96	3.98
<b>Cumulative FFC Emissions Reduction</b>						
CO <sub>2</sub> (million metric tons) .....	5.5	16.9	103.0	120.9	130.1	130.6
CH <sub>4</sub> (thousand tons) .....	37.6	117.0	712.4	835.5	898.2	902.8
N <sub>2</sub> O (thousand tons) .....	0.1	0.2	1.1	1.3	1.4	1.4
SO <sub>2</sub> (thousand tons) .....	2.4	7.6	46.7	54.9	59.1	59.3
NO <sub>x</sub> (thousand tons) .....	8.5	26.4	160.2	188.0	202.1	203.0
Hg (tons) .....	0.0	0.0	0.3	0.4	0.4	0.4
<b>Present Value of Benefits and Costs (3% discount rate, billion 2021\$)</b>						
Consumer Operating Cost Savings .....	1.0	3.2	19.5	23.1	24.9	25.0
Climate Benefits * .....	0.3	0.8	4.6	5.4	5.9	5.9
Health Benefits ** .....	0.5	1.4	7.9	9.3	10.1	10.1
Total Benefits † .....	1.8	5.4	32.1	37.9	40.9	41.0
Consumer Incremental Product Costs ‡ ..	0.0	–0.5	2.6	3.8	4.4	4.6
Consumer Net Benefits .....	1.0	3.7	16.9	19.3	20.5	20.4
Total Net Benefits .....	1.7	5.8	29.5	34.1	36.4	36.4
<b>Present Value of Benefits and Costs (7% discount rate, billion 2021\$)</b>						
Consumer Operating Cost Savings .....	0.4	1.3	7.5	8.9	9.7	9.7
Climate Benefits * .....	0.3	0.8	4.6	5.4	5.9	5.9
Health Benefits ** .....	0.2	0.5	2.8	3.3	3.6	3.6
Total Benefits † .....	0.9	2.6	14.9	17.7	19.1	19.1
Consumer Incremental Product Costs ‡ ..	0.0	–0.2	1.3	2.0	2.3	2.4
Consumer Net Benefits .....	0.4	1.5	6.2	7.0	7.4	7.3
Total Net Benefits .....	0.9	2.8	13.6	15.7	16.8	16.7

**Note:** This table presents the costs and benefits associated with GSLs shipped in 2029–2058. These results include benefits to consumers which accrue after 2058 from the products shipped in 2029–2058.

<sup>90</sup>P.C. Reiss and M.W. White. Household Electricity Demand, Revisited. *Review of Economic Studies*. 2005. 72(3): pp. 853–883. doi: 10.1111/0034-6527.00354.

<sup>91</sup>Sanstad, A.H. *Notes on the Economics of Household Energy Consumption and Technology Choice*. 2010. Lawrence Berkeley National Laboratory. [www1.eere.energy.gov/buildings/](http://www1.eere.energy.gov/buildings/)

[appliance\\_standards/pdfs/consumer\\_ee\\_theory.pdf](#) (last accessed March 25, 2022).

\* Climate benefits are calculated using four different estimates of the SC-CO<sub>2</sub>, SC-CH<sub>4</sub> and SC-N<sub>2</sub>O. Together, these represent the global SC-GHG. For presentational purposes of this table, the climate benefits associated with the average SC-GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC-GHG point estimate. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22-30087) granted the federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21-cv-1074-JDC-KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this proposed rule, DOE has reverted to its approach prior to the injunction and presents monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. DOE is currently only monetizing (for NO<sub>x</sub> and SO<sub>2</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. See section VI.L of this document for more details.

† Total benefits include consumer, climate, and health benefits. Total benefits for both the 3-percent and 7-percent cases are presented using the average SC-GHG with 3-percent discount rate, but the Department does not have a single central SC-GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC-GHG estimates. See Table VII.27 for net benefits using all four SC-GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs. Negative increment cost increases reflect a lower total first cost under a particular standard for GSLs shipped in 2029–2058. Several factors contribute to this, including that certain lamp option at higher ELs are less expensive than certain lamp options at lower ELs that would be eliminated under a particular standard level, the relative decrease in price of LED lamp options compared to less efficient CFL options due to price learning, and the longer lifetime of LED lamp options resulting in fewer purchases over the analysis period.

TABLE VII.29—SUMMARY OF ANALYTICAL RESULTS FOR GSL TSLs: MANUFACTURER AND CONSUMER IMPACTS

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5	TSL 6
<b>Manufacturer Impacts</b>						
Industry NPV ( <i>million 2021\$</i> ) (No-new-standards case INPV = 2,014) .....	1,964–1,968	1,880–1,874	1,838–1,868	1,821–1,873	1,745–1,868	1,741–1,867
Industry NPV ( <i>% change</i> ) .....	(2.5)–(2.3)	(6.6)–(6.9)	(8.6)–(7.1)	(9.5)–(6.9)	(13.2)–(7.2)	(13.5)–(7.2)
<b>Consumer Average LCC Savings (2021\$)</b>						
Integrated Omnidirectional Short .....	1.95	2.42	0.55	0.62	0.66	0.66
Integrated Omnidirectional Long .....	1.35	2.27	3.63	3.63	3.63	4.53
Integrated Directional .....	8.92	1.65	3.09	3.09	3.09	3.09
Non-integrated Omnidirectional .....	4.93	6.62	6.62	6.62	6.62	6.62
Non-integrated Directional .....	0.48	0.48	0.48	0.48	0.52	0.52
Shipment-Weighted Average * .....	2.77	2.30	1.18	1.24	1.26	1.32
<b>Consumer Simple PBP (years)</b>						
Integrated Omnidirectional Short .....	0.5	0.2	0.5	0.7	0.8	0.8
Integrated Omnidirectional Long .....	3.4	2.5	2.8	2.8	2.8	3.0
Integrated Directional .....	0.0	0.0	0.0	0.0	0.0	0.0
Non-integrated Omnidirectional .....	**>6.6	2.1	2.1	2.1	2.1	2.1
Non-integrated Directional .....	2.5	2.5	2.5	2.5	3.4	3.4
Shipment-Weighted Average * .....	0.8	0.4	0.7	0.8	0.9	0.9
<b>Percent of Consumers that Experience a Net Cost</b>						
Integrated Omnidirectional Short .....	0.8%	1.2%	18.0%	19.0%	19.8%	19.8%
Integrated Omnidirectional Long .....	4.2%	6.6%	4.9%	4.9%	4.9%	5.1%
Integrated Directional .....	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-integrated Omnidirectional .....	9.4%	0.2%	0.2%	0.2%	0.2%	0.2%
Non-integrated Directional .....	14.6%	14.6%	14.6%	14.6%	24.2%	24.2%
Shipment-Weighted Average * .....	1.2%	1.7%	14.4%	15.1%	15.8%	15.9%

Parentheses indicate negative (–) values.

\* Weighted by shares of each product class in total projected shipments in 2029.

\*\* Two lamp options exist at the minimum EL for TSL 1. One lamp option has a simple payback period of 6.6 years, and the other lamp has an infinite simple payback period. The aggregated simple payback period is therefore reported as greater than 6.6 years. Note that the shipment-weighted average (two rows below) assumes a defined value of 6.6 years for Non-integrated Omnidirectional lamps at TSL 1.

DOE first considered TSL 6, which represents the max-tech efficiency levels for all product classes. At this level, DOE expects that all product classes would require the most efficacious LED technology current available on the market. DOE estimates that approximately 17 percent of annual shipments across all GSL product classes currently meet the max-tech

efficiencies required. TSL 6 would save an estimated 3.98 quads of energy, an amount DOE considers significant. Under TSL 6, the NPV of consumer benefit would be \$7.3 billion using a discount rate of 7 percent, and \$20.4 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 6 are 130.6 Mt of CO<sub>2</sub>, 59.3

thousand tons of SO<sub>2</sub>, 203.0 thousand tons of NO<sub>x</sub>, 0.4 tons of Hg, 902.8 thousand tons of CH<sub>4</sub>, and 1.4 thousand tons of N<sub>2</sub>O. The estimated monetary value of the climate benefits from reduced GHG emissions (associated with the average SC-GHG at a 3-percent discount rate) at TSL 6 is \$5.9 billion. The estimated monetary value of the health benefits from reduced SO<sub>2</sub> and



NO<sub>x</sub> emissions at TSL 6 is \$3.6 billion using a 7-percent discount rate and \$10.1 billion using a 3-percent discount rate.

Using a 7-percent discount rate for consumer benefits and costs, health benefits from reduced SO<sub>2</sub> and NO<sub>x</sub> emissions, and the 3-percent discount rate case for climate benefits from reduced GHG emissions, the estimated total NPV at TSL 6 is \$16.7 billion. Using a 3-percent discount rate for all benefits and costs, the estimated total NPV at TSL 6 is \$36.4 billion. The estimated total NPV is provided for additional information, however DOE primarily relies upon the NPV of consumer benefits when determining whether a proposed standard level is economically justified.

At TSL 6 in the residential sector, the largest product classes are Integrated Omnidirectional Short GSLs, including traditional pear-shaped, candle-shaped, and globe-shaped GSLs, and Integrated Directional GSLs, including reflector lamps commonly used in recessed cans, which together account for 99 percent of annual shipments. The average LCC impact is a savings of \$0.59 and \$3.01 and a simple payback period of 0.8 years, and 0.0 years, respectively, for those product classes. The fraction of purchases associated with a net LCC cost is 22.0 percent and 0.0 percent, respectively. In the commercial sector, the largest product classes are Integrated Omnidirectional Short GSLs and Integrated Omnidirectional Long GSLs, including tubular LED GSLs often referred to as TLEDs, which together account for 91 percent of annual shipments. The average LCC impact is a savings of \$1.11 and \$4.74 and a simple payback period of 0.5 years and 2.9 years, respectively, for those product classes. The fraction of purchases associated with a net LCC cost is 4.8 and 2.3 percent, respectively. Overall, 15.9 percent of GSL purchases are associated with a net cost and the average LCC savings are positive for all product classes.

At TSL 6, an estimated 21.0 percent of purchases of Integrated Omnidirectional Short GSLs and 0.0 percent of purchases of Integrated Directional GSLs by low-income households are associated with a net cost. While 21.0 percent of purchases of Integrated Omnidirectional Short GSLs by low-income households would be associated with a net cost, DOE notes that a third of those purchases have a net cost of no more than \$0.25 and over 75 percent of those purchases have a net cost of no more than \$1.00. Moreover, DOE notes that the typical low-income household has multiple Integrated

Omnidirectional Short GSLs. Based on the average total number of lamps in a low-income household (23, based on RECS 2015) and the average fraction of lamps in the residential sector that are Integrated Omnidirectional Short GSLs (84 percent, based on DOE's shipments analysis), DOE estimates that low-income households would have approximately 19 Integrated Omnidirectional Short GSLs, on average. An analysis accounting for multiple lamp purchases would show significantly fewer low-income consumers experience a net cost at the household level than on a per-purchase basis. For example, assuming low-income households purchase two lamps per year over a period of seven years (corresponding to the average service life of the baseline Integrated Omnidirectional Short lamp), DOE estimates that only 6.0 percent of low-income households would experience a net cost and 94.0 percent would experience a net benefit.

At TSL 6, the projected change in INPV ranges from a decrease of \$271 million to a decrease of \$145 million, which corresponds to decreases of 13.5 percent and 7.2 percent, respectively. DOE estimates that approximately 83 percent of Integrated Omnidirectional Short shipments; approximately 86 percent of the Integrated Omnidirectional Long shipments; approximately 66 percent of the Integrated Directional shipments; approximately 45 percent of the Non-Integrated Omnidirectional-Short shipments; approximately 73 percent Non-Integrated Directional shipments are estimated to not meet the ELs analyzed at TSL 6 by 2029, the estimated first full year of compliance.

DOE estimates that industry must invest approximately \$407 million to redesign these non-compliant models into compliant models in order to meet the ELs analyzed at TSL 6. DOE assumed that most, if not all, LED lamp models would be remodeled between the estimated publication of this rulemaking's final rule and the estimated date which energy conservation standards are required, even in the absence of DOE energy conservation standards for GSLs. Therefore, GSL energy conservation standards set at TSL 6 would require GSL manufacturers to remodel their GSL models to a higher efficacy level during their regularly scheduled remodel cycle, due to energy conservation standards. GSL manufacturers would incur additional engineering resources to redesign their LED lamps to meet this higher efficacy requirement. DOE did not estimate that

GSL manufacturers would incur any capital conversion costs as the volume of LED lamps manufactured in 2029 would be fewer than the volume of LED lamps manufactured in the previous year, 2028, even at TSL 6. Additionally, DOE did not estimate that manufacturing more efficacious LED lamps would require additional or different capital equipment or tooling.

After considering the analysis and weighing the benefits and burdens, the Secretary has tentatively concluded that a standard set at TSL 6 for GSLs would result in the maximum improvement in energy efficiency that is technologically feasible and economically justified. At this TSL, the average LCC savings for all product classes is positive. An estimated 15.9 percent of all GSL purchases are associated with a net cost. While 21.0 percent of purchases of Integrated Omnidirectional Short GSLs by low-income households would be associated with a net cost, a third of those purchases have a net cost of no more than \$0.25 and over 75 percent of those purchases have a net cost of no more than \$1.00. And significantly fewer low-income consumers experience a net cost at the household level after accounting for multiple lamp purchases. The FFC national energy savings of 3.98 quads are significant and the NPV of consumer benefits is positive using both a 3-percent and 7-percent discount rate. Notably, the benefits to consumers vastly outweigh the decrease in manufacturers' INPV. At TSL 6, the NPV of consumer benefits, even measured at the more conservative discount rate of 7 percent is over 26 times higher than the maximum estimated manufacturers' loss in INPV. The standard levels at TSL 6 are economically justified even without weighing the estimated monetary value of emissions reductions. When those emissions reductions are included—representing \$5.9 billion in climate benefits (associated with the average SC-GHG at a 3-percent discount rate), and \$10.1 billion (using a 3-percent discount rate) or \$3.6 billion (using a 7-percent discount rate) in health benefits—the rationale becomes stronger still.

As stated, DOE conducts the walk-down analysis to determine the TSL that represents the maximum improvement in energy efficiency that is technologically feasible and economically justified as required under EPCA. 86 FR 70892, 70908. Although DOE has not conducted a comparative economic analysis to select the proposed energy conservation standards, DOE notes that the proposed standard level represents the maximum

improvement in energy efficiency for all product classes and is only \$0.1 billion less than the maximum consumer NPV, represented by TSL 5, at both 3 and 7 percent discount rates. Compared to TSL 4, Integrated Omnidirectional Short purchases at TSL 6 are approximately 1 percent more likely to be associated with a net cost, but NES is an additional 0.3 quads and NPV is an additional \$1.1 billion at 3 percent discount rate and \$0.3 billion at 7 percent discount rate. Compared to TSL 1 or 2, while 18 percent of Integrated Omnidirectional Short purchases at TSL 6 are associated with a net cost, compared to 1 percent at TSL 1 or 2, NES is more than 3 quads larger at TSL 6 and NPV is greater by more than \$16 billion at 3 percent discount rate and more than \$5 billion at 7 percent discount rate. These additional savings and benefits at TSL 6 are significant. DOE considers the

impacts to be, as a whole, economically justified at TSL 6.

DOE acknowledges that TSL 6 is estimated to result in 0.02 quads of additional FFC national energy savings compared to TSL 5. The national consumer NPV is larger at TSL 5, compared to TSL 6, by \$0.1 billion using either a 7-percent discount rate or a 3-percent discount rate. However, as noted previously, EPCA requires DOE to adopt the standard that would represent the maximum improvement in energy efficiency that is technically feasible and economically justified. DOE seeks comment on the merits of adopting TSL 5 as an alternative for the final rule. DOE could consider TSL 5, among others, in the final rule based on comments received. Additionally, given the relatively modest differences, DOE requests comment on the relative estimates of energy savings and net

benefits for TSLs 6 and 5 and whether there are additional sensitivities to consider beyond the equipment switching for TLEDs.

Although DOE considered proposed amended standard levels for GSLs by grouping the efficiency levels for each product class into TSLs, DOE evaluates all analyzed efficiency levels in its analysis. DOE notes that among all possible combinations of ELs, the proposed standard level represents the max NES and differs from max NPV by only \$0.1 billion.

Therefore, based on the previous considerations, DOE proposes to adopt the energy conservation standards for GSLs at TSL 6. The proposed amended energy conservation standards for GSLs, which are expressed as lamp efficacy or lumens per watt (lm/W), are shown in Table VII.30.

TABLE VII.30—PROPOSED AMENDED ENERGY CONSERVATION STANDARDS FOR GSLs

Representative product class	Efficacy (lm/W)
Integrated Omnidirectional Short (Not Capable of Operating in Standby Mode) .....	$123/(1.2+e^{-0.005*(\text{Lumens} - 200)}) + 25.9$
Integrated Omnidirectional Long (Not Capable of Operating in Standby Mode) .....	$123/(1.2+e^{-0.005*(\text{Lumens} - 200)}) + 74.1$
Integrated Directional (Not Capable of Operating in Standby Mode) .....	$73/(0.5+e^{-0.0021*(\text{Lumens} + 1000)}) - 47.2$
Non-integrated Omnidirectional Short .....	$122/(0.55+e^{-0.003*(\text{Lumens} + 250)}) - 83.4$
Non-integrated Directional .....	$67/(0.45+e^{-0.00176*(\text{Lumens} + 1310)}) - 53.1$
Integrated Omnidirectional Short (Capable of Operating in Standby Mode) .....	$123/(1.2+e^{-0.005*(\text{Lumens} - 200)}) + 17.1$
Integrated Directional (Capable of Operating in Standby Mode) .....	$73/(0.5+e^{-0.0021*(\text{Lumens} + 1000)}) - 50.9$
Non-integrated Omnidirectional Long .....	$123/(1.2+e^{-0.005*(\text{Lumens} - 200)}) + 93.0$

2. Annualized Benefits and Costs of the Proposed Standards

The benefits and costs of the proposed standards can also be expressed in terms of annualized values. The annualized net benefit is (1) the annualized national economic value (expressed in 2021\$) of the benefits from operating products that meet the proposed standards (consisting primarily of operating cost savings from using less energy), minus increases in product purchase costs, and (2) the annualized monetary value of the climate and health benefits from emission reductions.

Table VII.31 shows the annualized values for GSLs under TSL 6, expressed in 2021\$. The results under the primary estimate are as follows.

Using a 7-percent discount rate for consumer benefits and costs and NO<sub>x</sub> and SO<sub>2</sub> reduction benefits, and a 3-percent discount rate case for GHG social costs, the estimated cost of the proposed standards for GSLs is \$289.4 million per year in increased equipment costs, while the estimated annual benefits are \$1,171.5 million from reduced equipment operating costs, \$358.1 million from GHG reductions,

and \$432.0 million from reduced NO<sub>x</sub> and SO<sub>2</sub> emissions. In this case, the net benefit amounts to \$1,672.2 million per year.

Using a 3-percent discount rate for all benefits and costs, the estimated cost of the proposed standards for GSLs is \$280.3 million per year in increased equipment costs, while the estimated annual benefits are \$1,521.4 million in reduced operating costs, \$358.1 million from GHG reductions, and \$615.6 million from reduced NO<sub>x</sub> and SO<sub>2</sub> emissions. In this case, the net benefit amounts to \$2,214.8 million per year.

TABLE VII.31—ANNUALIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR GSLs (TSL 6)

	Million 2021\$/year		
	Primary estimate	Low-net-benefits estimate	High-net-benefits estimate
<b>3% discount rate</b>			
Consumer Operating Cost Savings .....	1,521.4	1,469.8	1,586.0
Climate Benefits * .....	358.1	357.7	358.5
Health Benefits ** .....	615.6	615.0	616.3
Total Benefits † .....	2495.1	2,442.5	2,560.8

TABLE VII.31—ANNUALIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR GSLs (TSL 6)—Continued

	Million 2021\$/year		
	Primary estimate	Low-net-benefits estimate	High-net-benefits estimate
Consumer Incremental Product Costs ‡	280.3	291.0	270.0
Net Benefits	2,214.8	2,151.6	2,290.7
<b>7% discount rate</b>			
Consumer Operating Cost Savings	1,171.5	1,135.9	1,215.2
Climate Benefits * (3% discount rate)	358.1	357.7	358.5
Health Benefits **	432.0	431.7	432.4
Total Benefits †	1,961.6	1,925.3	2,006.1
Consumer Incremental Product Costs ‡	289.4	299.4	279.8
Net Benefits	1,672.2	1,625.9	1,726.3

**Note:** This table presents the costs and benefits associated with GSLs shipped in 2029–2058. These results include benefits to consumers which accrue after 2058 from the products shipped in 2029–2058.

\* Climate benefits are calculated using four different estimates of the global SC–GHG (see section VI.L of this rulemaking). For presentational purposes of this table, the climate benefits associated with the average SC–GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC–GHG point estimate, and it emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this proposed rule, DOE has reverted to its approach prior to the injunction and presents monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. DOE is currently only monetizing (for NO<sub>x</sub> and SO<sub>2</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. See section VI.L of this document for more details.

† Total benefits include consumer, climate, and health benefits. Total benefits for both the 3-percent and 7-percent cases are presented using the average SC–GHG with 3-percent discount rate, but the Department does not have a single central SC–GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

*D. Reporting, Certification, and Sampling Plan*

Manufacturers, including importers, must use product-specific certification templates to certify compliance to DOE. For GSLs, the certification template reflects the general certification requirements specified at 10 CFR 429.12 and the product-specific requirements specified at 10 CFR 429.57. As discussed in the previous paragraphs, DOE is not proposing to amend the product-specific certification requirements for these products.

**VIII. Procedural Issues and Regulatory Review**

*A. Review Under Executive Orders 12866 and 13563*

Executive Order (E.O.) 12866, “Regulatory Planning and Review,” as supplemented and reaffirmed by E.O. 13563, “Improving Regulation and Regulatory Review, 76 FR 3821 (Jan. 21, 2011), requires agencies, to the extent permitted by law, to (1) propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs (recognizing that some benefits

and costs are difficult to quantify); (2) tailor regulations to impose the least burden on society, consistent with obtaining regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations; (3) select, in choosing among alternative regulatory approaches, those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity); (4) to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt; and (5) identify and assess available alternatives to direct regulation, including providing economic incentives to encourage the desired behavior, such as user fees or marketable permits, or providing information upon which choices can be made by the public. DOE emphasizes as well that E.O. 13563 requires agencies to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible. In its guidance, the Office of

Information and Regulatory Affairs (OIRA) in the Office of Management and Budget (OMB) has emphasized that such techniques may include identifying changing future compliance costs that might result from technological innovation or anticipated behavioral changes. For the reasons stated in the preamble, this proposed regulatory action is consistent with these principles.

Section 6(a) of E.O. 12866 also requires agencies to submit “significant regulatory actions” to OIRA for review. OIRA has determined that this proposed regulatory action constitutes an “economically significant regulatory action” under section 3(f) of E.O. 12866. Accordingly, pursuant to section 6(a)(3)(C) of E.O. 12866, DOE has provided to OIRA an assessment, including the underlying analysis, of benefits and costs anticipated from the proposed regulatory action, together with, to the extent feasible, a quantification of those costs; and an assessment, including the underlying analysis, of costs and benefits of potentially effective and reasonably feasible alternatives to the planned

regulation, and an explanation why the planned regulatory action is preferable to the identified potential alternatives. These assessments are summarized in this preamble and further detail can be found in the technical support document for this rulemaking.

### B. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires preparation of an initial regulatory flexibility analysis (IRFA) for any rule that by law must be proposed for public comment, unless the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. As required by E.O. 13272, "Proper Consideration of Small Entities in Agency Rulemaking," 67 FR 53461 (Aug. 16, 2002), DOE published procedures and policies on February 19, 2003, to ensure that the potential impacts of its rules on small entities are properly considered during the rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the Office of the General Counsel's website ([www.energy.gov/gc/office-general-counsel](http://www.energy.gov/gc/office-general-counsel)). DOE has prepared the following IRFA for the products that are the subject of this rulemaking.

#### 1. Description on Estimated Number of Small Entities Regulated

For manufacturers of GSLs, the SBA has set a size threshold, which defines those entities classified as "small businesses" for the purposes of the statute. DOE used the SBA's small business size standards to determine whether any small entities would be subject to the requirements of the rule. (See 13 CFR part 121.) The size standards are listed by NAICS code and industry description and are available at [www.sba.gov/document/support-table-size-standards](http://www.sba.gov/document/support-table-size-standards). Manufacturing of GSLs is classified under NAICS 335139, "electric lamp bulb and other lighting equipment manufacturing." The SBA sets a threshold of 1,250 employees or less for an entity to be considered as a small business for this category.

DOE created a database of GSLs covered by this rulemaking using publicly available information. DOE's research involved information from

DOE's compliance certification database,<sup>92</sup> EPA's ENERGY STAR Certified Light Bulbs Database,<sup>93</sup> manufacturers' websites, and retailer websites. DOE found over 800 companies that sell or manufacture GSLs covered in this rulemaking. Using information from D&B Hoovers, DOE screened out companies that have more than 1,250 employees or are completely foreign owned and operated. Based on the results of this analysis, DOE estimates there are approximately 347 small businesses that sell or manufacture GSLs covered by this rulemaking. Based on DOE's database, 326 of these potential small businesses exclusively sell or manufacture LED lamps and do not sell lamps using other technologies (*i.e.*, CFLs), while 21 potential small businesses sell or manufacture some CFLs covered by this rulemaking.

#### 2. Description and Estimate of Compliance Requirements Including Differences in Cost, if Any, for Different Groups of Small Entities

For the 326 small businesses that exclusively sell or manufacture LED lamps, these small businesses will be required to remodel many of the LED lamps they sell or manufacture if the proposed standards are adopted. However, GSL manufacturers stated during manufacturer interviews conducted prior to the March 2016 NOPR that their normal redesign cycle for an LED lamp model is between 18 months to 24 months.<sup>94</sup> DOE assumed that most, if not all, LED lamp models would be remodeled between the estimated publication of this rulemaking's final rule and the estimated date which energy conservation standards are required, even in the absence of DOE energy conservation standards for GSLs. However, small businesses exclusively selling or manufacturing LED lamps would be required to spend additional engineering time to remodel all LED

<sup>92</sup> [www.regulations.doe.gov/certification-data](http://www.regulations.doe.gov/certification-data).

<sup>93</sup> ENERGY STAR Qualified Lamps Product List, <https://www.energystar.gov/productfinder/product/certified-light-bulbs/results> (last accessed May 2, 2022).

<sup>94</sup> Redesign cycle refers to the time a specific LED lamp is on the market before it is redesigned and a newer model is introduced to the market to replace the existing model.

lamp models that would not meet the proposed energy conservation standards, since these LED lamp models would be required to be more efficacious than originally planned, in the no-new-standards case.

The methodology DOE used to estimate product conversion costs for this NOPR analysis is described in section VI.J.2.c of this document. At the proposed standards, TSL 6, DOE estimates that all manufacturers would incur approximately \$407 million in product conversion costs. These estimated product conversion costs, at TSL 6, represent approximately 6.6 percent of annual revenue over the estimated five-year compliance period.<sup>95</sup> While small manufacturers are likely to have lower per-model sales volumes than larger manufacturers, GSL manufacturer revenue from LED lamps is estimated to be approximately \$1,503 million in 2029, the estimated first full year of compliance, at TSL 6 compared to \$1,340 million in the no-new-standards case. This represents an increase of approximately 12 percent in annual revenue generated from the sales of LED lamps, since LED lamps will be the only technology capable of meeting the proposed standard.<sup>96</sup> DOE estimates that small GSL manufacturers exclusively selling LED lamps would incur no more than 4.5 percent of their annual revenue over the estimated five-year compliance period to redesign non-compliant LED lamps into compliant LED lamps meeting the proposed standards (*i.e.*, TSL 6).

For the 21 small businesses that sell some CFLs covered by this rulemaking, the impact of these proposed standards for each small business depends on the number of CFLs a small business sells or manufactures, and if they also sell LED lamps to replace these non-compliant CFLs. The 21 potential small businesses that DOE identified range in the number of covered CFLs they sell or manufacture from just one CFL model to 533 CFL models.

<sup>95</sup> The total estimated revenue between 2024, the estimated announcement year, and 2028, the year prior to the compliance year is approximately, \$9,078 million.  $\$407 \div \$9,078 = 4.5\%$ .

<sup>96</sup> In the no-new-standards case, the revenue in 2029 includes revenue from the sale of CFLs in addition to the revenue from LED lamps.

TABLE VIII.1—NUMBER OF SMALL BUSINESSES BY NUMBER OF COVERED CFL MODELS SOLD

	Number of covered CFL models sold by a small business				
	1–5 CFL models	6–20 CFL models	21–60 CFL models	61–533 CFL models	Total
Number of Small Businesses .....	8 .....	4 .....	4 .....	5 .....	21
Revenue from Small Business (Upper)	\$68 million .....	\$68 million .....	\$31 million .....	\$216 million.	
Revenue from Small Business (Lower)	\$0.4 million .....	\$28 million .....	\$1.8 million .....	\$7.1 million.	

Based on data from D&B Hoovers, DOE collected estimates of the range of annual revenue for small businesses based on the number of covered CFL models each small business sells or manufactures.

For the eight small businesses that sell or manufacture five or fewer covered CFLs, DOE does not anticipate these proposed standards would significantly impact these small businesses. All of the small businesses sell other products not covered by this rulemaking and would either continue to sell LED lamps covered by this rulemaking or exit the GSL market and would not recover any of the revenue previously earned from the sale of their five or fewer CFL models.

For the four small businesses that sell or manufacture between six and 20 CFL models, DOE also does not anticipate these proposed standards would significantly impact these small businesses. All these small businesses have annual revenue over \$28 million. The loss of sales from up to 20 CFL models is not likely to be a significant impact to a company with annual sales of \$28 million.

Some small businesses that sell or manufacture between 21 and 60 CFL models, could be potentially impacted by the proposed standards. Specifically, one small business has an annual revenue of \$1.8 million and sells approximately 41 CFL models (compared to 264 LED lamp models) covered by this rulemaking and another small business has an annual revenue of \$3.2 million and sells approximately 59 CFL models (compared to 557 LED lamp models) covered by this rulemaking. These two small businesses could be significantly impacted by the potential loss of CFL sales if these manufacturers are not able to replace these lost CFL sales with LED lamp sales.

For the five small businesses that manufacture between 61 and 533 CFL models, four of them have annual revenue of more than \$50 million. All of these four manufacturers also offer more than 1,000 LED lamps that are covered by this rulemaking. The loss of sales from these CLFs models, between 61 and 533 CFL models, is not likely to

be a significant impact to a company with annual sales of more than \$50 million, especially since all of these small manufacturers have more than 1,000 LED lamp models in addition to their CFL models. The last small business sells approximately 336 CFL models (compared to 925 LED lamp models) covered by this rulemaking and has an annual revenue of approximately \$7.1 million. This small business could be significantly impacted by the potential loss of CFL sales if this manufacturer is not able to replace their lost CFL sales with LED lamp sales.

Lastly, these CFL model counts represent the current market offerings of the identified small businesses. The shipment analysis projects a significant decline in CFL shipments from the reference year of the analysis (in 2022 CFL shipments are estimated to be approximately 33 million) compared to the CFL shipments in the estimated first full year of compliance (in 2029 CFL shipments are estimated to be approximately 6.6 million). Many of these small businesses will continue to replace CFL models with LED lamp models between now and the estimated compliance date even in the absence of energy conservation standards.

### 3. Duplication, Overlap, and Conflict With Other Rules and Regulations

DOE is not aware of any rules or regulations that duplicate, overlap, or conflict with the proposed new and amended standards. As discussed in this NOPR, the May 2022 Backstop Rule and May 2022 Definition Rule were recently issued under the first cycle of GSL rulemaking under 42 U.S.C. 6295(i)(6)(A). Effective July 2022, these rules expanded the definition of GSL and codified a statutorily prescribed backstop sales prohibition for the sale of any GSL that does not meet a minimum efficacy standard of 45 lm/W. Pursuant to statutory direction in 42 U.S.C. 6295(i)(6)(B), DOE is initiating this second cycle of rulemaking for GSLs to determine whether standards for GSLs should be further amended. While the statute directs DOE to begin this second cycle no later than January 1, 2020, DOE is delayed in initiating this rulemaking

for the reasons previously discussed in this NOPR. DOE is proposing an effective date for this NOPR consistent with statutory requirements in 42 U.S.C. 6295(i)(6)(B)(iii) that the Secretary publish a final rule with an effective date that is not earlier than 3 years after the date on which the final rule under this second cycle of rulemaking is published. DOE seeks comment on any rules or regulations that could potentially duplicate, overlap, or conflict with the proposed new and amended standards.

### 4. Significant Alternatives to the Rule

The discussion in the previous section analyzes impacts on small businesses that would result from DOE's proposed rule, represented by TSL 6. In reviewing alternatives to the proposed rule, DOE examined energy conservation standards set at lower efficiency levels. While TSL 1, TSL 2, TSL 3, TSL 4, and TSL 5 would reduce the impacts on small business manufacturers, it would come at the expense of a reduction in energy savings and consumer NPV. TSL 1 achieves 95.9 percent lower energy savings and a 95.0 percent lower consumer NPV compared to the energy savings and consumer NPV at TSL 6. TSL 2 achieves 87.1 percent lower energy savings and a 81.9 percent lower consumer NPV compared to the energy savings and consumer NPV at TSL 6. TSL 3 achieves 21.1 percent lower energy savings and a 16.9 percent lower consumer NPV compared to the energy savings and consumer NPV at TSL 6. TSL 4 achieves 7.5 percent lower energy savings and 5.5 percent lower consumer NPV compared to the energy savings and consumer NPV at TSL 6. TSL 5 achieves 0.5 percent lower energy savings compared to the energy savings at TSL 6.

Based on the presented discussion, establishing standards at TSL 6 balances the benefits of the energy savings at TSL 6 with the potential burdens placed on GSL manufacturers, including small business manufacturers. Moreover, establishing standards at TSL 6 represents the maximum improvement in energy efficiency that is technologically feasible and

economically justified as required under EPCA. Accordingly, DOE declines to propose one of the other TSLs considered in the analysis, or the other policy alternatives examined as part of the regulatory impact analysis included in chapter 16 of the NOPR TSD.

Additional compliance flexibilities may be available through other means. EPCA provides that a manufacturer whose annual gross revenue from all of its operations does not exceed \$8 million may apply for an exemption from all or part of an energy conservation standard for a period not longer than 24 months after the effective date of a final rule establishing the standard. Additionally, section 504 of the Department of Energy Organization Act, 42 U.S.C. 7194, provides authority for the Secretary to adjust a rule issued under EPCA in order to prevent “special hardship, inequity, or unfair distribution of burdens” that may be imposed on that manufacturer as a result of such rule. Manufacturers should refer to 10 CFR part 430, subpart E, and part 1003 for additional details.

#### *C. Review Under the Paperwork Reduction Act*

Manufacturers of GSLs must certify to DOE that their products comply with any applicable energy conservation standards. In certifying compliance, manufacturers must test their products according to the DOE test procedures for GSLs, including any amendments adopted for those test procedures. DOE has established regulations for the certification and recordkeeping requirements for all covered consumer products and commercial equipment, including GSLs. (See generally 10 CFR part 429). The collection-of-information requirement for the certification and recordkeeping is subject to review and approval by OMB under the Paperwork Reduction Act (PRA). This requirement has been approved by OMB under OMB control number 1910–1400. Public reporting burden for the certification is estimated to average 35 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB Control Number.

#### *D. Review Under the National Environmental Policy Act of 1969*

DOE is analyzing this proposed regulation in accordance with the National Environmental Policy Act of 1969 (NEPA) and DOE’s NEPA implementing regulations (10 CFR part 1021). DOE’s regulations include a categorical exclusion for rulemakings that establish energy conservation standards for consumer products or industrial equipment. 10 CFR part 1021, subpart D, appendix B5.1. DOE anticipates that this rulemaking qualifies for categorical exclusion B5.1 because it is a rulemaking that establishes energy conservation standards for consumer products or industrial equipment, none of the exceptions identified in categorical exclusion B5.1(b) apply, no extraordinary circumstances exist that require further environmental analysis, and it otherwise meets the requirements for application of a categorical exclusion. See 10 CFR 1021.410. DOE will complete its NEPA review before issuing the final rule.

#### *E. Review Under Executive Order 13132*

E.O. 13132, “Federalism,” 64 FR 43255 (Aug. 10, 1999), imposes certain requirements on Federal agencies formulating and implementing policies or regulations that preempt State law or that have federalism implications. The Executive Order requires agencies to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States and to carefully assess the necessity for such actions. The Executive order also requires agencies to have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications. On March 14, 2000, DOE published a statement of policy describing the intergovernmental consultation process it will follow in the development of such regulations. 65 FR 13735. DOE has examined this proposed rule and has tentatively determined that it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. EPCA governs and prescribes Federal preemption of State regulations as to energy conservation for the products that are the subject of this proposed rule. States can petition DOE for exemption from such preemption to the extent, and based on criteria, set forth in EPCA. (42 U.S.C. 6297) Therefore, no

further action is required by Executive Order 13132.

#### *F. Review Under Executive Order 12988*

With respect to the review of existing regulations and the promulgation of new regulations, section 3(a) of E.O. 12988, “Civil Justice Reform,” imposes on Federal agencies the general duty to adhere to the following requirements: (1) eliminate drafting errors and ambiguity, (2) write regulations to minimize litigation, (3) provide a clear legal standard for affected conduct rather than a general standard, and (4) promote simplification and burden reduction. 61 FR 4729 (Feb. 7, 1996). Regarding the review required by section 3(a), section 3(b) of E.O. 12988 specifically requires that Executive agencies make every reasonable effort to ensure that the regulation: (1) clearly specifies the preemptive effect, if any, (2) clearly specifies any effect on existing Federal law or regulation, (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction, (4) specifies the retroactive effect, if any, (5) adequately defines key terms, and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in section 3(a) and section 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE has completed the required review and determined that, to the extent permitted by law, this proposed rule meets the relevant standards of E.O. 12988.

#### *G. Review Under the Unfunded Mandates Reform Act of 1995*

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and Tribal governments and the private sector. Public Law 104–4, section 201 (codified at 2 U.S.C. 1531). For a proposed regulatory action likely to result in a rule that may cause the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector of \$100 million or more in any one year (adjusted annually for inflation), section 202 of UMRA requires a Federal agency to publish a written statement that estimates the resulting costs, benefits, and other effects on the national economy. (2 U.S.C. 1532(a), (b)) The UMRA also requires a Federal agency to develop an effective process to permit timely input by elected

officers of State, local, and Tribal governments on a proposed “significant intergovernmental mandate,” and requires an agency plan for giving notice and opportunity for timely input to potentially affected small governments before establishing any requirements that might significantly or uniquely affect them. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820. DOE’s policy statement is also available at [https://energy.gov/sites/prod/files/gcprod/documents/umra\\_97.pdf](https://energy.gov/sites/prod/files/gcprod/documents/umra_97.pdf).

Although this proposed rule does not contain a Federal intergovernmental mandate, it may require expenditures of \$100 million or more in any one year by the private sector. Such expenditures may include: (1) investment in research and development and in capital expenditures by GSL manufacturers in the years between the final rule and the compliance date for the new standards and (2) incremental additional expenditures by consumers to purchase higher-efficiency GSLs, starting at the compliance date for the applicable standard.

Section 202 of UMRA authorizes a Federal agency to respond to the content requirements of UMRA in any other statement or analysis that accompanies the proposed rule. (2 U.S.C. 1532(c)) The content requirements of section 202(b) of UMRA relevant to a private sector mandate substantially overlap the economic analysis requirements that apply under section 325(o) of EPCA and Executive Order 12866. The **SUPPLEMENTARY INFORMATION** section of this NOPR and the TSD for this proposed rule respond to those requirements.

Under section 205 of UMRA, the Department is obligated to identify and consider a reasonable number of regulatory alternatives before promulgating a rule for which a written statement under section 202 is required. (2 U.S.C. 1535(a)) DOE is required to select from those alternatives the most cost-effective and least burdensome alternative that achieves the objectives of the proposed rule unless DOE publishes an explanation for doing otherwise, or the selection of such an alternative is inconsistent with law. As required by 42 U.S.C. 6295(i)(6)(A)–(B)), this proposed rule would establish amended energy conservation standards for GSLs that are designed to achieve the maximum improvement in energy efficiency that DOE has determined to be both technologically feasible and economically justified, as required by 42 U.S.C. 6295(o)(2)(A) and 6295(o)(3)(B).

A full discussion of the alternatives considered by DOE is presented in chapter 16 of the TSD for this proposed rule.

#### *H. Review Under the Treasury and General Government Appropriations Act, 1999*

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub. L. 105–277) requires Federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. This proposed rule would not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE has concluded that it is not necessary to prepare a Family Policymaking Assessment.

#### *I. Review Under Executive Order 12630*

Pursuant to E.O. 12630, “Governmental Actions and Interference with Constitutionally Protected Property Rights,” 53 FR 8859 (Mar. 15, 1988), DOE has determined that this proposed rule would not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

#### *J. Review Under the Treasury and General Government Appropriations Act, 2001*

Section 515 of the Treasury and General Government Appropriations Act, 2001 (44 U.S.C. 3516 note) provides for Federal agencies to review most disseminations of information to the public under information quality guidelines established by each agency pursuant to general guidelines issued by OMB. OMB’s guidelines were published at 67 FR 8452 (Feb. 22, 2002), and DOE’s guidelines were published at 67 FR 62446 (Oct. 7, 2002). Pursuant to OMB Memorandum M–19–15, Improving Implementation of the Information Quality Act (April 24, 2019), DOE published updated guidelines which are available at [www.energy.gov/sites/prod/files/2019/12/f70/DOE%20Final%20Updated%20IQA%20Guidelines%20Dec%202019.pdf](http://www.energy.gov/sites/prod/files/2019/12/f70/DOE%20Final%20Updated%20IQA%20Guidelines%20Dec%202019.pdf). DOE has reviewed this NOPR under the OMB and DOE guidelines and has concluded that it is consistent with applicable policies in those guidelines.

#### *K. Review Under Executive Order 13211*

E.O. 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” 66 FR 28355 (May 22, 2001), requires Federal agencies to prepare and submit to OIRA at OMB, a Statement of Energy Effects for any proposed significant

energy action. A “significant energy action” is defined as any action by an agency that promulgates or is expected to lead to promulgation of a final rule, and that (1) is a significant regulatory action under Executive Order 12866, or any successor order; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy, or (3) is designated by the Administrator of OIRA as a significant energy action. For any proposed significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use should the proposal be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use.

DOE has tentatively concluded that this regulatory action, which proposes amended energy conservation standards for GSLs, is not a significant energy action because the proposed standards are not likely to have a significant adverse effect on the supply, distribution, or use of energy, nor has it been designated as such by the Administrator at OIRA. Accordingly, DOE has not prepared a Statement of Energy Effects on this proposed rule.

#### *L. Information Quality*

On December 16, 2004, OMB, in consultation with the Office of Science and Technology Policy (OSTP), issued its Final Information Quality Bulletin for Peer Review (the Bulletin). 70 FR 2664 (Jan. 14, 2005). The Bulletin establishes that certain scientific information shall be peer reviewed by qualified specialists before it is disseminated by the Federal Government, including influential scientific information related to agency regulatory actions. The purpose of the bulletin is to enhance the quality and credibility of the Government’s scientific information. Under the Bulletin, the energy conservation standards rulemaking analyses are “influential scientific information,” which the Bulletin defines as “scientific information the agency reasonably can determine will have, or does have, a clear and substantial impact on important public policies or private sector decisions.” 70 FR 2664, 2667.

In response to OMB’s Bulletin, DOE conducted formal peer reviews of the energy conservation standards development process and the analyses that are typically used and has prepared a report describing that peer review.<sup>97</sup>

<sup>97</sup> The 2007 “Energy Conservation Standards Rulemaking Peer Review Report” is available at the following website: <http://energy.gov/eere/buildings/>

Generation of this report involved a rigorous, formal, and documented evaluation using objective criteria and qualified and independent reviewers to make a judgment as to the technical/scientific/business merit, the actual or anticipated results, and the productivity and management effectiveness of programs and/or projects. Because available data, models, and technological understanding have changed since 2007, DOE has engaged with the National Academy of Sciences to review DOE's analytical methodologies to ascertain whether modifications are needed to improve the Department's analyses. DOE is in the process of evaluating the resulting report.<sup>98</sup>

#### *M. Description of Materials Incorporated by Reference*

UL 1598C is an industry accepted test standard that provides requirements for LED downlight retrofit kits. To clarify the scope of the standard proposed in this NOPR, DOE is updating the definition for "LED Downlight Retrofit Kit" to reference UL 1598C in the definition. UL 1598C is reasonably available on UL's website at <https://www.shopulstandards.com/Default.aspx>.

The following standards have already been approved for incorporation by reference in their respective locations in the regulatory text: ANSI C78.79–2014 (R2020); ANSI C81.61–2006.

### **IX. Public Participation**

#### *A. Participation in the Webinar*

The time and date of the webinar meeting are listed in the **DATES** section at the beginning of this document. Webinar registration information, participant instructions, and information about the capabilities available to webinar participants will be published on DOE's website: [https://www1.eere.energy.gov/buildings/appliance\\_standards/standards.aspx?productid=4](https://www1.eere.energy.gov/buildings/appliance_standards/standards.aspx?productid=4). Participants are responsible for ensuring their systems are compatible with the webinar software.

#### *B. Procedure for Submitting Prepared General Statements for Distribution*

Any person who has an interest in the topics addressed in this rulemaking, or who is representative of a group or class of persons that has an interest in these

issues, may request an opportunity to make an oral presentation at the webinar. Such persons may submit to [ApplianceStandardsQuestions@ee.doe.gov](mailto:ApplianceStandardsQuestions@ee.doe.gov). Persons who wish to speak should include with their request a computer file in WordPerfect, Microsoft Word, PDF, or text (ASCII) file format that briefly describes the nature of their interest in this rulemaking and the topics they wish to discuss. Such persons should also provide a daytime telephone number where they can be reached.

Persons requesting to speak should briefly describe the nature of their interest in this rulemaking and provide a telephone number for contact. DOE requests persons selected to make an oral presentation to submit an advance copy of their statements at least two weeks before the webinar. At its discretion, DOE may permit persons who cannot supply an advance copy of their statement to participate, if those persons have made advance alternative arrangements with the Building Technologies Office. As necessary, requests to give an oral presentation should ask for such alternative arrangements.

#### *C. Conduct of the Webinar*

DOE will designate a DOE official to preside at the webinar and may also use a professional facilitator to aid discussion. The meeting will not be a judicial or evidentiary-type public hearing, but DOE will conduct it in accordance with section 336 of EPCA (42 U.S.C. 6306). A court reporter will be present to record the proceedings and prepare a transcript. DOE reserves the right to schedule the order of presentations and to establish the procedures governing the conduct of the webinar/public meeting. There shall not be discussion of proprietary information, costs or prices, market share, or other commercial matters regulated by U.S. anti-trust laws. After the webinar/public meeting and until the end of the comment period, interested parties may submit further comments on the proceedings and any aspect of the rulemaking.

The webinar will be conducted in an informal, conference style. DOE will present summaries of comments received before the webinar/public meeting, allow time for prepared general statements by participants, and encourage all interested parties to share their views on issues affecting this proposed rule. Each participant will be allowed to make a general statement (within time limits determined by DOE), before the discussion of specific topics. DOE will permit, as time permits, other

participants to comment briefly on any general statements.

At the end of all prepared statements on a topic, DOE will permit participants to clarify their statements briefly. Participants should be prepared to answer questions by DOE and by other participants concerning these issues. DOE representatives may also ask questions of participants concerning other matters relevant to this rulemaking. The official conducting the webinar/public meeting will accept additional comments or questions from those attending, as time permits. The presiding official will announce any further procedural rules or modification of the above procedures that may be needed for the proper conduct of the webinar/public meeting.

A transcript of the webinar meeting will be included in the docket, which can be viewed as described in the *Docket* section at the beginning of this proposed rule. In addition, any person may buy a copy of the transcript from the transcribing reporter.

#### *D. Submission of Comments*

DOE will accept comments, data, and information regarding this proposed rule before or after the public meeting, but no later than the date provided in the **DATES** section at the beginning of this proposed rule. Interested parties may submit comments, data, and other information using any of the methods described in the **ADDRESSES** section at the beginning of this document.

*Submitting comments via www.regulations.gov.* The [www.regulations.gov](http://www.regulations.gov) web page will require you to provide your name and contact information. Your contact information will be viewable to DOE Building Technologies staff only. Your contact information will not be publicly viewable except for your first and last names, organization name (if any), and submitter representative name (if any). If your comment is not processed properly because of technical difficulties, DOE will use this information to contact you. If DOE cannot read your comment due to technical difficulties and cannot contact you for clarification, DOE may not be able to consider your comment.

However, your contact information will be publicly viewable if you include it in the comment itself or in any documents attached to your comment. Any information that you do not want to be publicly viewable should not be included in your comment, nor in any document attached to your comment. Otherwise, persons viewing comments will see only first and last names, organization names, correspondence

[downloads/energy-conservation-standards-rulemaking-peer-review-report-0](https://www1.eere.energy.gov/buildings/appliance_standards/standards.aspx?productid=4). (last accessed 3/24/2022)

<sup>98</sup>The report is available at [www.nationalacademies.org/our-work/review-of-methods-for-setting-building-and-equipment-performance-standards](https://www.nationalacademies.org/our-work/review-of-methods-for-setting-building-and-equipment-performance-standards).



containing comments, and any documents submitted with the comments.

Do not submit to *www.regulations.gov* information for which disclosure is restricted by statute, such as trade secrets and commercial or financial information (hereinafter referred to as Confidential Business Information (CBI)). Comments submitted through *www.regulations.gov* cannot be claimed as CBI. Comments received through the website will waive any CBI claims for the information submitted. For information on submitting CBI, see the Confidential Business Information section.

DOE processes submissions made through *www.regulations.gov* before posting. Normally, comments will be posted within a few days of being submitted. However, if large volumes of comments are being processed simultaneously, your comment may not be viewable for up to several weeks. Please keep the comment tracking number that *www.regulations.gov* provides after you have successfully uploaded your comment.

*Submitting comments via email.* Comments and documents submitted via email also will be posted to *www.regulations.gov*. If you do not want your personal contact information to be publicly viewable, do not include it in your comment or any accompanying documents. Instead, provide your contact information in a cover letter. Include your first and last names, email address, telephone number, and optional mailing address. The cover letter will not be publicly viewable as long as it does not include any comments.

Include contact information each time you submit comments, data, documents, and other information to DOE. No telefacsimiles (faxes) will be accepted.

Comments, data, and other information submitted to DOE electronically should be provided in PDF (preferred), Microsoft Word or Excel, WordPerfect, or text (ASCII) file format. Provide documents that are not secured, that are written in English, and that are free of any defects or viruses. Documents should not contain special characters or any form of encryption and, if possible, they should carry the electronic signature of the author.

*Campaign form letters.* Please submit campaign form letters by the originating organization in batches of between 50 to 500 form letters per PDF or as one form letter with a list of supporters' names compiled into one or more PDFs. This reduces comment processing and posting time.

*Confidential Business Information.* Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit via email two well-marked copies: one copy of the document marked "confidential" including all the information believed to be confidential, and one copy of the document marked "non-confidential" with the information believed to be confidential deleted. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

It is DOE's policy that all comments may be included in the public docket, without change and as received, including any personal information provided in the comments (except information deemed to be exempt from public disclosure).

#### *E. Issues on Which DOE Seeks Comment*

Although DOE welcomes comments on any aspect of this proposal, DOE is particularly interested in receiving comments and views of interested parties concerning the following issues:

(1) DOE requests comments on the proposed updates to the definitions of "General service incandescent lamp," "General service lamp," "LED downlight retrofit kit," "Reflector lamp," "Showcase lamp," and Specialty MR lamp." See section IV.B of this document.

(2) DOE requests comments on the proposed definition for "Circadian-friendly integrated LED lamp." DOE also requests comments on the consumer utility and efficacy potential of lamps marketed to improve the sleep-wake cycle. See section IV.B of this document.

(3) DOE requests comments on the non-efficacy metrics proposed for GSLs. See section V of this document.

(4) DOE requests comments on whether or not phased-in effective dates are necessary for this rulemaking. See section VI of this document.

(5) DOE requests comments and data on the impact of diameter on efficacy for linear LED lamps. See section of this document.

(6) DOE requests comments on all attributes the same, how the efficacy of pin base LED lamp replacements and linear LED lamps compare. See section VI.A.1 of this document.

(7) DOE requests comments on the proposed product classes. See section VI.A.1 of this document.

(8) DOE requests comments on the proposed technology options. See section VI.A.2 of this document.

(9) DOE requests comments on the design options it has identified. See section VI.B of this document.

(10) DOE requests comments on the representative product classes (*i.e.*, product classes directly analyzed) identified for this analysis. See section VI.C.2 of this document.

(11) DOE requests comments on the baseline lamps selected for each representative product class (*i.e.*, Integrated Omnidirectional Short Non-standby Mode, Integrated Directional Non-standby Mode, Integrated Omnidirectional Long, Non-integrated Omnidirectional Short, and Non-integrated Directional). See section VI.C.3 of this document.

(12) DOE requests comments on the more efficacious substitutes selected for each representative product class (*i.e.*, Integrated Omnidirectional Short Non-standby Mode, Integrated Directional Non-standby Mode, Integrated Omnidirectional Long, Non-integrated Omnidirectional Short, and Non-integrated Directional). See section VI.C.4 of this document.

(13) DOE requests comments on whether any characteristics (*e.g.*, diameter [T5, T8]) may prevent or allow a linear LED lamp to achieve high efficacies. See section VI.C.4 of this document.

(14) DOE requests comments on the ELs analyzed for each representative product class (*i.e.*, Integrated Omnidirectional Short Non-standby Mode, Integrated Directional Non-standby Mode, Integrated Omnidirectional Long, Non-integrated Omnidirectional Short, and Non-integrated Directional). See section VI.C.5 of this document.

(15) DOE requests comment on its approach to scaling non-representative product classes in this NOPR. See section IX.E for a list of issues on which DOE seeks comment.

(16) DOE requests comments on its tentative determination that lamps such as Type B or Type A/B linear LED lamps do not have standby mode functionality. See section VI.C.6.a of this document.

(17) DOE requests comments on its methodology for determining end-user prices and the resulting prices. See section VI.D of this document.

(18) DOE requests comment on the data and methodology used to estimate operating hours for GSLs in the residential sector. See section VI.E.1 of this document.

(19) DOE requests comment on the data and methodology used to estimate operating hours for GSLs in the commercial sector. See section VI.E.1 of this document.

(20) DOE requests any relevant data and comment on the energy use analysis methodology. See section VI.E.3 of this document.

(21) DOE requests comment on the installation cost assumptions used in its analyses. See section VI.F.2 of this document.

(22) DOE requests comment on the GSL service lifetime model used in its analyses. In particular, DOE seeks information about the rate of premature failures for LED lamps analyzed in this NOPR and whether or not this rate differs from that of comparable CFLs or general service fluorescent lamps. DOE also seeks feedback or data that would inform the modeling of Integrated Omnidirectional Long lamp lifetimes, which have a longer rated lifetime than LED lamps in the other analyzed product classes. See section VI.F.5 of this document.

(23) DOE requests comment and relevant data on the disposal cost assumptions used

in its analyses. See section VI.F.7 of this document.

(24) DOE requests any relevant data and comment on the LCC and PBP analysis methodology. See section VI.F.11 of this document.

(25) DOE requests comment on the assumption that 15 percent of demand will be met by integral LED luminaires. See section VI.G.1.a of this document.

(26) DOE requests any relevant data and comment on the shipment analysis methodology. See section VI.G.1 of this document.

(27) DOE requests data or feedback that might inform the assumption that linear lamps (regardless of technology type) are increasingly absent from new construction. See section VI.G.1.a of this document.

(28) DOE requests input on the described method of accounting for demand lost to integral LED fixtures. In particular, DOE seeks information about the rate at which linear lamp stock is converted to integrated LED fixtures via retrofit or renovation. See section VI.G.1.a of this document.

(29) DOE also used a Bass adoption model to estimate the diffusion of LED lamp technologies into the non-integrated product class and requests feedback on its assumption that non-integrated LED lamp options became available starting in 2015. See section VI.G.1.c of this document.

(30) DOE requests relevant historical data on GSL shipments, disaggregated by product class and lamp technology, as they become available in order to improve the accuracy of the shipments analysis. See section VI.G.1.c of this document.

(31) DOE requests comment on the assumption that smart lamps will reach 50 percent market penetration by 2058. See section VI.H.1.a of this document.

(32) DOE requests comment on the methodology and assumptions used to determine the market share of the lumen range distributions. See section VI.H.1.b of this document.

(33) DOE requests information on market share by lamp type and the composition of stock by type for Type A and Type B linear LED lamps in order to help refine the applied scaling. See section VI.H.1.c of this document.

(34) DOE requests comment on the use of 1.52 as the average distribution chain markup for all GSLs and the use of 1.55 as the average manufacturer markup for all GSLs. See section VI.J.2.a of this document.

(35) DOE requests comment on the methodology used to calculate product and capital conversion costs for GSLs in this NOPR. Specifically, DOE requests comment on whether GSL manufacturers would incur any capital conversion costs, given the decline in LED lamps sales in the first full year of compliance for all TSLs. If capital conversion costs would be incurred, DOE requests these costs be quantified, if possible. Additionally, DOE requests comment on the estimated product conversion costs; the assumption that most LED lamp models would be remodeled between the estimated publication of this rulemaking's final rule and the estimated date which energy conservation standards are required, even in

the no-new-standards case; and the estimated additional engineering time to remodel LED lamp models to comply with the analyzed TSLs. See section VI.J.2.c of this document.

(36) DOE requests comment on how to address the climate benefits and other effects of the proposal. See section VI.L of this document.

(37) DOE seeks comment on the assumption that there are no GSL manufacturers manufacturing CFLs in the United States. Additionally, DOE requests comment on the assumption that up to 30 domestic non-production employees are involved in the R&D, marketing, sales, and distribution of CFLs in the United States, which may be eliminated if energy conservation standards are set at TSL 2 or higher. Lastly, DOE seeks comment on the assumption that GSL manufacturers would not reduce or eliminate any domestic production or non-production employees involved in manufacturing or selling LED lamps due to any of the analyzed TSLs in this NOPR. See section VII.B.2.b of this document.

(38) DOE requests information regarding the impact of cumulative regulatory burden on manufacturers of GSLs associated with multiple DOE standards or product-specific regulatory actions of other Federal agencies, specifically if these standards occur within three years prior to and after 2028. See section VII.B.2.e of this document.

(39) DOE welcomes comments on how to more fully assess the potential impact of energy conservation standards on consumer choice and how to quantify this impact in its regulatory analysis in future rulemakings. See section VII.C of this document.

(40) DOE seeks comment on the merits of adopting TSL 5 as an alternative. See section VII.C.1 of this document.

(41) DOE requests comment on the relative estimates of energy savings and net benefits for TSLs 6 and 5 and whether there are additional sensitivities to consider. See section VII.C.1 of this document.

(42) Additionally, DOE welcomes comments on other issues relevant to the conduct of this rulemaking that may not specifically be identified in this document. See section IX.E of this document.

## X. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this notice of proposed rulemaking and announcement of public meeting.

### List of Subjects in 10 CFR Part 430

Administrative practice and procedure, Confidential business information, Energy conservation, Household appliances, Imports, Incorporation by reference, Intergovernmental relations, Small businesses.

### Signing Authority

This document of the Department of Energy was signed on December 16, 2022, by Francisco Alejandro Moreno,

Acting Assistant Secretary for Energy Efficiency and Renewable Energy, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the **Federal Register**.

Signed in Washington, DC, on December 20, 2022.

**Treena V. Garrett**

*Federal Register Liaison Officer, U.S. Department of Energy.*

For the reasons set forth in the preamble, DOE proposes to amend 430 of chapter II, subchapter D, of title 10 of the Code of Federal Regulations, as set forth below:

## PART 430—ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS

■ 1. The authority citation for part 430 continues to read as follows:

**Authority:** 42 U.S.C. 6291–6309; 28 U.S.C. 2461 note.

■ 2. Section 430.2 is amended by:

■ a. Adding, in alphabetical order, the definition for “Circadian-friendly integrated LED lamp”; and

■ b. Revising the definitions for “General service incandescent lamp”, “General service lamp”, “LED downlight retrofit kit”, “Reflector lamp”, “Showcase Lamp”, and “Specialty MR Lamp”.

The addition and revisions read as follows:

### § 430.2 Definitions.

\* \* \* \* \*

*Circadian-friendly integrated LED lamp* means an integrated LED lamp that—

(1) Is designed and marketed for use in the human sleep-wake (circadian) cycle;

(2) Is designed and marketed as an equivalent replacement for a 40 W or 60 W incandescent lamp;

(3) Has at least one setting that decreases or removes standard spectrum radiation emission in the 440 nm to 490 nm range; and

(4) Is sold in packages of two lamps or less.

\* \* \* \* \*

*General service incandescent lamp* means a standard incandescent or

halogen type lamp that is intended for general service applications; has a medium screw base; has a lumen range of not less than 310 lumens and not more than 2,600 lumens or, in the case of a modified spectrum lamp, not less than 232 lumens and not more than 1,950 lumens; and is capable of being operated at a voltage range at least partially within 110 and 130 volts; however, this definition does not apply to the following incandescent lamps—

- (1) An appliance lamp;
- (2) A black light lamp;
- (3) A bug lamp;
- (4) A colored lamp;
- (5) A G shape lamp with a diameter of 5 inches or more as defined in ANSI C78.79–2014 (R2020) (incorporated by reference; see § 430.3);
- (6) An infrared lamp;
- (7) A left-hand thread lamp;
- (8) A marine lamp;
- (9) A marine signal service lamp;
- (10) A mine service lamp;
- (11) A plant light lamp;
- (12) An R20 short lamp;
- (13) A sign service lamp;
- (14) A silver bowl lamp;
- (15) A showcase lamp; and
- (16) A traffic signal lamp.

*General service lamp* means a lamp that has an ANSI base; is able to operate at a voltage of 12 volts or 24 volts, at or between 100 to 130 volts, at or between 220 to 240 volts, or of 277 volts for integrated lamps (as defined in this section), or is able to operate at any voltage for non-integrated lamps (as defined in this section); has an initial lumen output of greater than or equal to 310 lumens (or 232 lumens for modified spectrum general service incandescent lamps) and less than or equal to 3,300 lumens; is not a light fixture; is not an LED downlight retrofit kit; and is used in general lighting applications. General service lamps include, but are not limited to, general service incandescent lamps, compact fluorescent lamps, general service light-emitting diode lamps, and general service organic light emitting diode lamps. General service lamps do not include:

- (1) Appliance lamps;
- (2) Black light lamps;
- (3) Bug lamps;
- (4) Colored lamps;
- (5) G shape lamps with a diameter of 5 inches or more as defined in ANSI C78.79–2014 (R2020) (incorporated by reference; see § 430.3);
- (6) General service fluorescent lamps;
- (7) High intensity discharge lamps;

- (8) Infrared lamps;
- (9) J, JC, JCD, JCS, JCV, JCX, JD, JS, and JT shape lamps that do not have Edison screw bases;
- (10) Lamps that have a wedge base or prefocus base;
- (11) Left-hand thread lamps;
- (12) Marine lamps;
- (13) Marine signal service lamps;
- (14) Mine service lamps;
- (15) MR shape lamps that have a first number symbol equal to 16 (diameter equal to 2 inches) as defined in ANSI C78.79–2014 (R2020) (incorporated by reference; see § 430.3), operate at 12 volts, and have a lumen output greater than or equal to 800;
- (16) Other fluorescent lamps;
- (17) Plant light lamps;
- (18) R20 short lamps;
- (19) Reflector lamps (as defined in this section) that have a first number symbol less than 16 (diameter less than 2 inches) as defined in ANSI C78.79–2014 (R2020) (incorporated by reference; see § 430.3) and that do not have E26/E24, E26d, E26/50x39, E26/53x39, E29/28, E29/53x39, E39, E39d, EP39, or EX39 bases;
- (20) S shape or G shape lamps that have a first number symbol less than or equal to 12.5 (diameter less than or equal to 1.5625 inches) as defined in ANSI C78.79–2014 (R2020) (incorporated by reference; see § 430.3);
- (21) Sign service lamps;
- (22) Silver bowl lamps;
- (23) Showcase lamps;
- (24) Specialty MR lamps;
- (25) T-shape lamps that have a first number symbol less than or equal to 8 (diameter less than or equal to 1 inch) as defined in ANSI C78.79–2014 (R2020) (incorporated by reference; see § 430.3), nominal overall length less than 12 inches, and that are not compact fluorescent lamps (as defined in this section);
- (26) Traffic signal lamps.

*LED downlight retrofit kit* means a product designed and marketed to install into an existing downlight, replacing the existing light source and related electrical components, typically employing an ANSI standard lamp base, either integrated or connected to the downlight retrofit by wire leads, and is a retrofit kit classified or certified to UL 1598C (incorporated by reference; see § 430.3). LED downlight retrofit kit does not include integrated lamps or non-integrated lamps.

*Reflector lamp* means a lamp that has an R, PAR, BPAR, BR, ER, MR, or

similar bulb shape as defined in ANSI C78.79–2014 (R2020) (incorporated by reference; see § 430.3) and is used to provide directional light.

*Showcase lamp* means a lamp that has a T-shape as specified in ANSI C78.79–2014 (R2020) (incorporated by reference; see § 430.3), is designed and marketed as a showcase lamp, and has a maximum rated wattage of 75 watts.

*Specialty MR lamp* means a lamp that has an MR shape as defined in ANSI C78.79–2014 (R2020) (incorporated by reference; see § 430.3), a diameter of less than or equal to 2.25 inches, a lifetime of less than or equal to 300 hours, and that is designed and marketed for a specialty application.

■ 4. Section 430.3 is amended by adding paragraph (w)(4) to read as follows:

**§ 430.3 Materials incorporated by reference.**

\* \* \* \* \*

(w) \* \* \*

(4) UL 1598C, Standard for Light-Emitting Diode (LED) Retrofit Luminaire Conversion Kits, approved January 12, 2017, IBR approved for § 430.2.

- 5. Section 430.32 is amended by:
  - a. Removing and reserving paragraph (u); and
  - b. Revising paragraphs (x) and (dd)

The revisions read as follows:

**§ 430.32 Energy and water conservation standards and their compliance dates.**

\* \* \* \* \*

(x) *Intermediate base incandescent lamps and candelabra base incandescent lamps.* (1) Each candelabra base incandescent lamp shall not exceed 60 rated watts.

(2) Each intermediate base incandescent lamp shall not exceed 40 rated watts.

\* \* \* \* \*

(dd) *General service lamps.* (1) Energy conservation standards for general service lamps:

(i) General service incandescent lamps manufactured after the dates specified in the tables below, except as described in paragraph (dd)(1)(ii) of this section, shall have a color rendering index greater than or equal to 80 and shall have a rated wattage no greater than, and a lifetime no less than the values shown in the table as follows:

GENERAL SERVICE INCANDESCENT LAMPS

Rated lumen ranges	Minimum lifetime* (hrs)	Maximum rate wattage	Compliance date
(A) 1490–2600 .....	1,000	72	1/1/2012
(B) 1050–1489 .....	1,000	53	1/1/2013
(C) 750–1049 .....	1,000	43	1/1/2014
(D) 310–749 .....	1,000	29	1/1/2014

\* Use lifetime determined in accordance with § 429.66 to determine compliance with this standard.

(ii) Modified spectrum general service incandescent lamps manufactured after the dates specified in the table below shall have a color rendering index greater than or equal to 75 and shall have a rated wattage no greater than, and a lifetime no less than the values shown in the table as follows:

MODIFIED SPECTRUM GENERAL SERVICE INCANDESCENT LAMPS

Rated lumen ranges	Minimum lifetime* (hrs)	Maximum rate wattage	Compliance date
(A) 1118–1950 .....	1,000	72	1/1/2012
(B) 788–1117 .....	1,000	53	1/1/2013
(C) 563–787 .....	1,000	43	1/1/2014
(D) 232–562 .....	1,000	29	1/1/2014

\* Use lifetime determined in accordance with § 429.66 to determine compliance with this standard.

(iii) A bare or covered (no reflector) medium base compact fluorescent lamp manufactured on or after January 1, 2006, must meet or exceed the following requirements:

Factor	Labeled wattage (watts)	Requirements
Configuration *		Minimum initial lamp efficacy (lumens per watt) must be at least:
(A) Bare Lamp .....	(1) Labeled Wattage <15 .....	45.0
	(2) Labeled Wattage ≥15 .....	60.0
(B) Covered Lamp (no reflector) .....	(1) Labeled Wattage <15 .....	40.0
	(2) 15 ≤ Labeled Wattage <19 .....	48.0
	(3) 19 ≤ Labeled Wattage <25 .....	50.0
	(4) Labeled Wattage ≥25 .....	55.0

\* Use labeled wattage to determine the appropriate efficacy requirements in this table; do not use measured wattage for this purpose.

(iv) Each general service lamp manufactured on or after July 25, 2028 must have: (A) A power factor greater than or equal to 0.7 for integrated LED lamps (as defined in § 430.2) and 0.5 for integrated compact fluorescent lamps (as defined in appendix W of subpart B); and (B) A lamp efficacy greater than or equal to the values shown in the table as follows:

(A) A power factor greater than or equal to 0.7 for integrated LED lamps (as

Lamp type	Length	Standby mode operation	Efficacy (lm/W)
(1) Integrated Omnidirectional .....	Short (<45 inches) .....	No Standby Mode .....	$123/(1.2+e^{-0.005*(\text{Lumens} - 200)}) + 25.9$
(2) Integrated Omnidirectional .....	Long (≥45 inches) .....	No Standby Mode .....	$123/(1.2+e^{-0.005*(\text{Lumens} - 200)}) + 74.1$
(3) Integrated Directional .....	All Lengths .....	No Standby Mode .....	$73/(0.5+e^{-0.0021*(\text{Lumens} + 1000)}) - 47.2$
(4) Non-integrated Omnidirectional .....	Short (<45 inches) .....	No Standby Mode .....	$122/(0.55+e^{-0.003*(\text{Lumens} + 250)}) - 83.4$
(5) Non-integrated Directional .....	All Lengths .....	No Standby Mode .....	$67/(0.45+e^{-0.00176*(\text{Lumens} + 1310)}) - 53.1$
(6) Integrated Omnidirectional .....	Short (<45 inches) .....	Standby Mode .....	$123/(1.2+e^{-0.005*(\text{Lumens} - 200)}) + 17.1$
(7) Integrated Directional .....	All Lengths .....	Standby Mode .....	$73/(0.5+e^{-0.0021*(\text{Lumens} + 1000)}) - 50.9$
(8) Non-integrated Omnidirectional .....	Long (≥45 inches) .....	No Standby Mode .....	$123/(1.2+e^{-0.005*(\text{Lumens} - 200)}) + 93.0$

(2) Medium base CFLs (as defined in § 430.2) manufactured on or after the dates specified in the table shall meet or exceed the following standards as follows:

Metrics	Requirements for MBCFLs manufactured on or after January 1, 2006	Requirements for MBCFLs manufactured on or after July 25, 2028
(i) Lumen Maintenance at 1,000 Hours .....		≥90.0%
(ii) Lumen Maintenance at 40 Percent of Lifetime.*		≥80.0%
(iii) Rapid Cycle Stress Test .....	At least 5 lamps <i>must meet or exceed</i> the minimum number of cycles.	
	All MBCFLs: Cycle once per every two hours of lifetime.*	MBCFLs with start time >100 ms: Cycle once per hour of lifetime* or a maximum of 15,000 cycles. MBCFLs with a start time of ≤100 ms: Cycle once per every two hours of lifetime. *
(iv) Lifetime *	≥6,000 hours .....	≥10,000 hours
(v) Start time .....	No requirement .....	The time needed for a MBCFL to remain continuously illuminated must be within: {1} one second of application of electrical power for lamp with standby mode power; {2} 750 milliseconds of application of electrical power for lamp without standby mode power.

\* Lifetime refers to lifetime of a compact fluorescent lamp as defined in 10 CFR 430.2.

(3) Lamps with a medium screw base or any other screw base not defined in ANSI C81.61–2006 (incorporated by reference, see § 430.3); intended for a general service or general illumination application (whether incandescent or not); capable of being operated at a voltage at least partially within the range of 110 to 130 volts; and manufactured or imported after the dates specified in the table must meet or exceed the following standards:

Lamp type	Color Rendering Index (CRI) requirement	Compliance date
Non-modified spectrum .....	80	July 25, 2028.
Modified spectrum .....	70	July 25, 2028.

(4) The standards described in paragraph (dd)(3) of this section do not

apply to lamps exempted from the definition of general service lamps.

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Part III

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10 CFR Part 431

Energy Conservation Program: Energy Conservation Standards for  
Distribution Transformers; Proposed Rule

## DEPARTMENT OF ENERGY

## 10 CFR Part 431

[EERE-2019-BT-STD-0018]

RIN 1904-AE12

**Energy Conservation Program: Energy Conservation Standards for Distribution Transformers**

**AGENCY:** Office of Energy Efficiency and Renewable Energy, Department of Energy.

**ACTION:** Notice of proposed rulemaking and announcement of public meeting.

**SUMMARY:** The Energy Policy and Conservation Act, as amended (“EPCA”), prescribes energy conservation standards for various consumer products and certain commercial and industrial equipment, including distribution transformers. EPCA also requires the U.S. Department of Energy (“DOE”) to periodically determine whether more-stringent standards would be technologically feasible and economically justified, and would result in significant energy savings. In this notice of proposed rulemaking (“NOPR”), DOE proposes amended energy conservation standards for distribution transformers, and also announces a public meeting to receive comment on these proposed standards and associated analyses and results.

**DATES:** DOE will hold a public meeting via webinar on Thursday, February 16, 2023, from 1:00 p.m. to 4:00 p.m. See section VII, “Public Participation,” for webinar registration information, participant instructions and information about the capabilities available to webinar participants.

**Comments:** DOE will accept comments, data, and information regarding this NOPR no later than March 13, 2023.

Comments regarding the likely competitive impact of the proposed standard should be sent to the Department of Justice contact listed in the **ADDRESSES** section on or before February 10, 2023.

Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at [www.regulations.gov](http://www.regulations.gov). Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE-2019-BT-STD-0018, by any of the following methods:

**Email:**

[DistributionTransformers2019STD0018@ee.doe.gov](mailto:DistributionTransformers2019STD0018@ee.doe.gov). Include the docket number EERE-2019-BT-STD-0018 in the subject line of the message.

**Postal Mail:** Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, Mailstop EE-5B, 1000 Independence Avenue SW, Washington, DC 20585-0121. Telephone: (202) 287-1445. If possible, please submit all items on a compact disc (“CD”), in which case it is not necessary to include printed copies.

**Hand Delivery/Courier:** Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, 950 L’Enfant Plaza SW, 6th Floor, Washington, DC 20024. Telephone: (202) 287-1445. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

No telefacsimiles (“faxes”) will be accepted. For detailed instructions on submitting comments and additional information on this process, see section IV of this document.

**Docket:** The docket for this activity, which includes **Federal Register** notices, comments, and other supporting documents/materials, is available for review at [www.regulations.gov](http://www.regulations.gov). All documents in the docket are listed in the [www.regulations.gov](http://www.regulations.gov) index. However, not all documents listed in the index may be publicly available, such as information that is exempt from public disclosure.

The docket web page can be found at [www.regulations.gov/docket/EERE-2019-BT-STD-0018](http://www.regulations.gov/docket/EERE-2019-BT-STD-0018). The docket web page contains instructions on how to access all documents, including public comments, in the docket. See section VII of this document for information on how to submit comments through [www.regulations.gov](http://www.regulations.gov).

EPCA requires the Attorney General to provide DOE a written determination of whether the proposed standard is likely to lessen competition. The U.S. Department of Justice Antitrust Division invites input from market participants and other interested persons with views on the likely competitive impact of the proposed standard. Interested persons may contact the Division at [energy.standards@usdoj.gov](mailto:energy.standards@usdoj.gov) on or before the date specified in the **DATES** section. Please indicate in the “Subject” line of your email the title and Docket Number of this proposed rule.

**FOR FURTHER INFORMATION CONTACT:**

Mr. Jeremy Dommu, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, EE-5B, 1000 Independence Avenue SW, Washington, DC 20585-0121. Telephone: (202) 586-9870. Email: [ApplianceStandardsQuestions@ee.doe.gov](mailto:ApplianceStandardsQuestions@ee.doe.gov).

Mr. Matthew Ring, U.S. Department of Energy, Office of the General Counsel, GC-33, 1000 Independence Avenue SW, Washington, DC 20585-0121. Telephone: (202) 586-2555. Email: [matthew.ring@hq.doe.gov](mailto:matthew.ring@hq.doe.gov).

For further information on how to submit a comment, review other public comments and the docket, or participate in the public meeting, contact the Appliance and Equipment Standards Program staff at (202) 287-1445 or by email: [ApplianceStandardsQuestions@ee.doe.gov](mailto:ApplianceStandardsQuestions@ee.doe.gov).

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## I. Synopsis of the Proposed Rule

The EPCA,<sup>1</sup> (42 U.S.C. 6291–6317, as codified) authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. Title III, Part B<sup>2</sup> of EPCA (42 U.S.C. 6291–6309, as codified), established the Energy Conservation Program for “Consumer Products Other Than Automobiles.” Title III, Part C<sup>3</sup> of EPCA (42 U.S.C.

<sup>1</sup> All references to EPCA in this document refer to the statute as amended through the Energy Act of 2020, Public Law 116–260 (Dec. 27, 2020), which reflect the last statutory amendments that impact Parts A and A–1 of EPCA.

<sup>2</sup> For editorial reasons, upon codification in the U.S. Code, Part B was re-designated Part A.

<sup>3</sup> For editorial reasons, upon codification in the U.S. Code, Part C was re-designated Part A–1. While EPCA includes provisions regarding distribution transformers in both Part A and Part A–1, for administrative convenience DOE has established the test procedures and standards for distribution transformers in 10 CFR part 431, Energy Efficiency



6311–6317, as codified), added by Public Law 95–619, Title IV, section 411(a), established the Energy Conservation Program for Certain Industrial Equipment. The Energy Policy Act of 1992, Public Law 102–486, amended EPCA and directed DOE to prescribe energy conservation standards for those distribution transformers for which DOE determines such standards would be technologically feasible, economically justified, and would result in significant energy savings. (42 U.S.C. 6317(a)) The Energy Policy Act of 2005, Public Law 109–58, amended EPCA to establish energy conservation standards for low-voltage dry-type distribution transformers. (42 U.S.C. 6295(y))

Pursuant to EPCA, any new or amended energy conservation standard must be designed to achieve the maximum improvement in energy efficiency that DOE determines is technologically feasible and economically justified. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(A)) Furthermore, the new or amended standard must result in a significant conservation of energy. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(3)(B)) EPCA also provides that not later than 6 years after issuance of any final rule establishing or amending a standard, DOE must publish either a notice of determination that standards for the product do not need to be amended, or a notice of proposed rulemaking

including new proposed energy conservation standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6316(a); 42 U.S.C. 6295(m))

In accordance with these and other statutory provisions discussed in this document, DOE proposes amended energy conservation standards for distribution transformers. The proposed standards, which are expressed in efficiency as a percentage, are shown in Table I.1 of this document. These proposed standards, if adopted, would apply to all distribution transformers listed in Table I.1, Table I.2, and Table I.3 manufactured in, or imported into, the United States starting on the date 3 years after the publication of the final rule for this rulemaking.

TABLE I.1—PROPOSED ENERGY CONSERVATION STANDARDS FOR LOW-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS

Single-phase		Three-phase	
kVA	Efficiency (%)	kVA	Efficiency (%)
15	98.84	15	98.72
25	98.99	30	98.93
37.5	99.09	45	99.03
50	99.14	75	99.16
75	99.24	112.5	99.24
100	99.30	150	99.29
167	99.35	225	99.36
250	99.40	300	99.41
333	99.45	500	99.48
		750	99.54
		1,000	99.57

TABLE I.2—PROPOSED ENERGY CONSERVATION STANDARDS FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS

Single-phase		Three-phase	
kVA	Efficiency (%)	kVA	Efficiency (%)
10	98.96	15	98.92
15	99.05	30	99.06
25	99.16	45	99.13
37.5	99.24	75	99.22
50	99.29	112.5	99.29
75	99.35	150	99.33
100	99.40	225	99.38
167	99.46	300	99.42
250	99.51	500	99.48
333	99.54	750	99.52
500	99.59	1,000	99.54
667	99.62	1,500	99.58
833	99.64	2,000	99.61
		2,500	99.62
		3,750	99.66
		5,000	99.68

Program for Certain Commercial and Industrial Equipment. DOE refers to distribution transformers

generally as “covered equipment” in this document.

TABLE I.3—PROPOSED ENERGY CONSERVATION STANDARDS FOR MEDIUM-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS

Single-phase				Three-phase			
kVA	BIL *			kVA	BIL *		
	20–45 kV	46–95 kV	≥96 kV		20–45 kV	46–95 kV	≥96 kV
	Efficiency (%)	Efficiency (%)	Efficiency (%)		Efficiency (%)	Efficiency (%)	Efficiency (%)
15	98.29	98.07		15	97.74	97.45	
25	98.49	98.30		30	98.11	97.86	
37.5	98.64	98.47		45	98.29	98.07	
50	98.74	98.58		75	98.49	98.31	
75	98.86	98.71	98.68	112.5	98.67	98.52	
100	98.94	98.80	98.77	150	98.78	98.66	
167	99.06	98.95	98.92	225	98.94	98.82	98.71
250	99.16	99.05	99.02	300	99.04	98.93	98.82
333	99.23	99.13	99.09	500	99.18	99.09	99.00
500	99.30	99.21	99.18	750	99.29	99.21	99.12
667	99.34	99.26	99.23	1,000	99.35	99.28	99.20
833	99.38	99.31	99.28	1,500	99.43	99.37	99.29
				2,000	99.49	99.42	99.35
				2,500	99.52	99.47	99.40
				3,750	99.58	99.53	99.47
				5,000	99.62	99.58	99.51

\* BIL means basic impulse insulation level.

A. Benefits and Costs to Consumers

Table I.4 presents DOE’s evaluation of the monetized impacts of the proposed standards on consumers of distribution transformers, as measured by the average life-cycle cost (“LCC”) savings and the simple payback period (“PBP”).<sup>4</sup> The average LCC savings are positive for all equipment classes in all

cases, with the exception of representative unit 14, and the PBP is less than the average lifetime of distribution transformers, which is estimated to be 32 years (see section IV.F.8 of this document).

In the context of this NOPR, the term consumer refers to different populations that purchase and bear the operating

costs of distribution transformers. Consumers vary by transformer type; for medium-voltage liquid-immersed distribution transformers the term consumer refers to electric utilities; for low- and medium-voltage dry-type distribution transformers the term consumer refers to commercial and industrial entities.

TABLE I.4—IMPACTS OF PROPOSED ENERGY CONSERVATION STANDARDS ON CONSUMERS OF DISTRIBUTION TRANSFORMERS

Equipment class	Representative unit	Average LCC savings (2021\$)	Simple payback period (years)
1	1	72	16.0
1	2	131	10.1
1	3	1,029	12.2
1	4	511	11.9
2	5	1,543	13.8
2	17	6,594	15.8
12	15	* n.a.	* n.a.
12	16	* n.a.	* n.a.
3	6	147	11.7
4	7	564	8.9
4	8	722	11.8
6	9	887	2.4
6	10	653	11.4
8	11	226	11.9
8	12	3,051	1.1
8	18	22,797	8.1
10	13	228	12.4
10	14	–2,856	26.1
10	19	8,082	11.3

\* No-new standards are currently being proposed for equipment class 12, “n.a” indicates that there are no consumer savings.

<sup>4</sup> The average LCC savings and simple PBP refer to consumers that are affected by a standard and are measured relative to the efficiency distribution in the no-new-standards case, which depicts the

market in the compliance year in the absence of new or amended standards. The determination of the distribution of efficiencies in the no-new-standards case is a function of the units selected

from the consumer choice model. (see section IV.F.3 of this document).

DOE's analysis of the impacts of the proposed standards on consumers is described in section IV.F of this document.

### B. Impact on Manufacturers

The industry net present value ("INPV") is the sum of the discounted cash flows to the industry from the base year through the end of the analysis period (2022–2056). Using a real discount rate of 7.4 percent for liquid-immersed distribution transformers, 11.1 percent for low-voltage dry-type ("LVDT") distribution transformers, and 9.0 percent for medium-voltage dry-type ("MVDT") distribution transformers, DOE estimates that the INPV for manufacturers of distribution transformers in the case without amended standards is \$1,384 million in 2021\$ for liquid-immersed distribution transformers, \$194 million in 2021\$ for LVDT distribution transformers, and \$87 million in 2021\$ for MVDT distribution transformers. Under the proposed standards, the change in INPV is estimated to range from –18.1 percent to –10.9 percent for liquid-immersed distribution transformers which represents a change in INPV of approximately –\$251.3 million to –\$151.0 million; from –31.4 percent to –17.2 percent for LVDT distribution transformers, which represents a change in INPV of approximately –\$61.0 million to –\$33.5 million; and –3.0 percent to –0.9 percent for MVDT distribution transformers, which represents a change in INPV of approximately –\$2.7 million to –\$0.8 million. In order to bring products into compliance with amended standards, it is estimated that the industry would incur total conversion costs of \$270.6 million for liquid-immersed distribution transformer, \$69.4 million for LVDT distribution transformers, and \$3.1 million for MVDT distribution transformers.

DOE's analysis of the impacts of the proposed standards on manufacturers is described in section IV.J of this document. The analytic results of the manufacturer impact analysis ("MIA") are presented in section V.B.2 of this document.

### C. National Benefits and Costs<sup>5</sup>

#### 1. Liquid-Immersed Distribution Transformers

DOE's analyses indicate that the proposed energy conservation standards for liquid-immersed distribution transformers would save a significant amount of energy. Relative to the case

without amended standards, the lifetime energy savings for liquid-immersed distribution transformers purchased in the 30-year period that begins in the anticipated year of compliance with the amended standards (2027–2056) amount to 8.02 quadrillion British thermal units ("Btu"), or quads.<sup>6</sup> This represents a fleet savings of 36 percent relative to the energy use of these products in the case without amended standards (referred to as the "no-new-standards case").

The cumulative net present value ("NPV") of total consumer benefits of the proposed standards for distribution transformers ranges from 0.26 billion (2021\$) (at a 7-percent discount rate) to 5.30 billion (2021\$) (at a 3-percent discount rate). This NPV expresses the estimated total value of future operating-cost savings minus the estimated increased product costs for distribution transformers purchased in 2027–2056.

In addition, the proposed standards for liquid-immersed distribution transformers are projected to yield significant environmental benefits. DOE estimates that the proposed standards would result in cumulative emission reductions (over the same period as for energy savings) of 256.27 million metric tons ("Mt")<sup>7</sup> of carbon dioxide ("CO<sub>2</sub>"), 99.71 thousand tons of sulfur dioxide ("SO<sub>2</sub>"), 403.57 thousand tons of nitrogen oxides ("NO<sub>x</sub>"), 1,846.56 thousand tons of methane ("CH<sub>4</sub>"), 2.32 thousand tons of nitrous oxide ("N<sub>2</sub>O"), and 0.65 tons of mercury ("Hg").<sup>8</sup>

DOE estimates climate benefits from a reduction in greenhouse gases (GHG) using four different estimates of the social cost of CO<sub>2</sub> ("SC-CO<sub>2</sub>"), the social cost of methane ("SC-CH<sub>4</sub>"), and the social cost of nitrous oxide ("SC-N<sub>2</sub>O"). Together these represent the social cost of GHG (SC-GHG). DOE used interim SC-GHG values developed by an Interagency Working Group on the Social Cost of Greenhouse Gases (IWG),<sup>9</sup>

<sup>6</sup> The quantity refers to full-fuel-cycle ("FFC") energy savings. FFC energy savings includes the energy consumed in extracting, processing, and transporting primary fuels (*i.e.*, coal, natural gas, petroleum fuels), and, thus, presents a more complete picture of the impacts of energy efficiency standards. For more information on the FFC metric, see section IV.H.2 of this document.

<sup>7</sup> A metric ton is equivalent to 1.1 short tons. Results for emissions other than CO<sub>2</sub> are presented in short tons.

<sup>8</sup> DOE calculated emissions reductions relative to the no-new-standards case, which reflects key assumptions in the *Annual Energy Outlook 2022* ("AEO2022"). AEO2022 represents current federal and state legislation and final implementation of regulations as of the time of its preparation. See section IV.K of this document for further discussion of AEO2022 assumptions that effect air pollutant emissions.

<sup>9</sup> See Interagency Working Group on Social Cost of Greenhouse Gases, Technical Support Document:

as discussed in section IV.L. of this document. For presentational purposes, the climate benefits associated with the average SC-GHG at a 3-percent discount rate are \$8.66 billion. DOE does not have a single central SC-GHG point estimate and it emphasizes the importance and value of considering the benefits calculated using all four SC-GHG estimates.<sup>10</sup>

DOE also estimates health benefits from SO<sub>2</sub> and NO<sub>x</sub> emissions reductions.<sup>11</sup> DOE estimates the present value of the health benefits would be \$4.69 billion using a 7-percent discount rate, and \$15.57 billion using a 3-percent discount rate.<sup>12</sup> DOE is currently only monetizing (for SO<sub>2</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions.

Table I.5 summarizes the monetized benefits and costs expected to result from the proposed standards for liquid-immersed distribution transformers. In the table, total benefits for both the 3-percent and 7-percent cases are presented using the average GHG social costs with 3-percent discount rate, but the Department emphasizes the importance and value of considering the benefits calculated using all four SC-GHG cases. The estimated total net benefits using each of the four cases are

Social Cost of Carbon, Methane, and Nitrous Oxide. Interim Estimates Under Executive Order 13990, Washington, DC, February 2021. [https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument\\_SocialCostofCarbonMethaneNitrousOxide.pdf](https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf).

<sup>10</sup> On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the federal government's emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit's order, the preliminary injunction is no longer in effect, pending resolution of the federal government's appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from "adopting, employing, treating as binding, or relying upon" the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this rule, DOE has reverted to its approach prior to the injunction and present monetized greenhouse gas abatement benefits where appropriate and permissible under law.

<sup>11</sup> DOE estimated the monetized value of SO<sub>2</sub> and NO<sub>x</sub> emissions reductions associated with electricity savings using benefit per ton estimates from the EPA. *e.* See section IV.L.2 of this document for further discussion.

<sup>12</sup> DOE estimates the economic value of these emissions reductions resulting from the considered TSLs for the purpose of complying with the requirements of Executive Order 12866.

<sup>5</sup> All monetary values in this document are expressed in 2021 dollars.

presented in section V.B.8 of this document.

TABLE I.5—SUMMARY OF MONETIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS (TSL 4)

	Billion (\$2021)
<b>3% discount rate</b>	
Consumer Operating Cost Savings .....	12.77
Climate Benefits * .....	8.66
Health Benefits ** .....	15.57
Total Benefits † .....	37.01
Consumer Incremental Product Costs ‡ .....	7.48
Net Benefits .....	29.53
<b>7% discount rate</b>	
Consumer Operating Cost Savings .....	4.28
Climate Benefits * (3% discount rate) .....	8.66
Health Benefits ** .....	4.69
Total Benefits † .....	17.63
Consumer Incremental Product Costs ‡ .....	4.02
Net Benefits .....	13.61

This table presents the costs and benefits associated with distribution transformers shipped in 2027–2056. These results include benefits to consumers which accrue after 2056 from the products shipped in 2027–2056.

\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC–CO2), methane (SC–CH4), and nitrous oxide (SC–N2O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC–GHG). For presentational purposes of this table, the climate benefits associated with the average SC–GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC–GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this rule, DOE has reverted to its approach prior to the injunction and present monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. DOE is currently only monetizing (for SO<sub>2</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. The health benefits are presented at real discount rates of 3 and 7 percent. See section IV.L of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC–GHG with 3-percent discount rate, but the Department does not have a single central SC–GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates. See Table V.69 for net benefits using all four SC–GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

The benefits and costs of the proposed standards can also be expressed in terms of annualized values. The monetary values for the total annualized net benefits are (1) the reduced consumer operating costs, minus (2) the increase in product purchase prices and installation costs, plus (3) the value of the benefits of GHG and NO<sub>x</sub> and SO<sub>2</sub> emission reductions, all annualized.<sup>13</sup> The national operating savings are domestic private U.S. consumer monetary savings that occur as a result of purchasing the covered products and

are measured for the lifetime of distribution transformers shipped in 2027–2056. The benefits associated with reduced emissions achieved as a result of the proposed standards are also calculated based on the lifetime of liquid-immersed distribution transformers shipped in 2027–2056.

Estimates of annualized benefits and costs of the proposed standards are shown in Table I.6. The results under the primary estimate are as follows.

Using a 7-percent discount rate for consumer benefits and costs and health

benefits from reduced NO<sub>x</sub> and SO<sub>2</sub> emissions, and the 3-percent discount rate case for climate benefits from reduced GHG emissions, the estimated cost of the standards proposed in this rule is \$424.8 million per year in increased equipment costs, while the estimated annual benefits are \$451.9 million in reduced equipment operating costs, \$497.4 million in climate benefits, and \$495.3 million in health benefits. In this case, the net benefit would amount to \$1,019.8 million per year.

<sup>13</sup>To convert the time-series of costs and benefits into annualized values, DOE calculated a present value in 2021, the year used for discounting the NPV of total consumer costs and savings. For the

benefits, DOE calculated a present value associated with each year’s shipments in the year in which the shipments occur (e.g., 2030), and then discounted the present value from each year to 2021. Using the

present value, DOE then calculated the fixed annual payment over a 30-year period, starting in the compliance year, that yields the same present value.

TABLE I.6—ANNUALIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS (TSL 4)

Category	Million (2021\$/year)		
	Primary estimate	Low-net-benefits estimate	High-net-benefits estimate
<b>3% discount rate</b>			
Consumer Operating Cost Savings .....	733.5	686.9	789.9
Climate Benefits * .....	497.4	478.9	519.5
Health Benefits ** .....	894.3	860.5	934.8
Total Benefits † .....	2,125.3	2,026.3	2,244.2
Consumer Incremental Product Costs ‡ .....	429.5	449.0	413.2
Net Benefits .....	1,695.8	1,577.3	1,831.0
<b>7% discount rate</b>			
Consumer Operating Cost Savings .....	451.9	425.7	482.2
Climate Benefits * (3% discount rate) .....	497.4	478.9	519.5
Health Benefits ** .....	495.3	477.9	515.3
Total Benefits † .....	1,444.7	1,382.5	1,517.0
Consumer Incremental Product Costs ‡ .....	424.8	442.1	409.9
Net Benefits .....	1,019.8	940.5	1,107.2

This table presents the costs and benefits associated with distribution transformers shipped in 2027–2056. These results include benefits to consumers which accrue after 2056 from the products shipped in 2027–2056.

\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC-CO2), methane (SC-CH4), and nitrous oxide (SC-N2O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC-GHG). For presentational purposes of this table, the climate benefits associated with the average SC-GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC-GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this rule, DOE has reverted to its approach prior to the injunction and present monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NOx and SO2. The benefits are based on the low estimates of the monetized value. DOE is currently only monetizing (for SOx and NOx) PM2.5 precursor health benefits and (for NOx) ozone precursor health benefits but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM2.5 emissions. See section IV.L of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC-GHG with 3-percent discount rate, but the Department does not have a single central SC-GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC-GHG estimates. See Table V.69 for net benefits using all four SC-GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

2. Low-Voltage Dry-Type Distribution Transformers

DOE’s analyses indicate that the proposed energy conservation standards for low-voltage dry-type distribution transformers would save a significant amount of energy. Relative to the case without amended standards, the lifetime energy savings for low-voltage dry-type distribution transformers purchased in the 30-year period that begins in the anticipated year of compliance with the amended standards (2027–2056) amount to 2.47 quadrillion British thermal units (“Btu”), or quads.<sup>14</sup> This represents a

<sup>14</sup> The quantity refers to full-fuel-cycle (“FFC”) energy savings. FFC energy savings includes the energy consumed in extracting, processing, and transporting primary fuels (i.e., coal, natural gas, petroleum fuels), and, thus, presents a more complete picture of the impacts of energy efficiency standards. For more information on the FFC metric, see section IV.H.2 of this document.

fleet savings of 47 percent relative to the energy use of these products in the case without amended standards (referred to as the “no-new-standards case”).

The cumulative net present value (“NPV”) of total consumer benefits of the proposed standards for low-voltage dry-type distribution transformers ranges from 2.63 billion (2021\$) (at a 7-percent discount rate) to 9.63 billion (2021\$) (at a 3-percent discount rate). This NPV expresses the estimated total value of future operating-cost savings minus the estimated increased product costs for low-voltage dry-type distribution transformers purchased in 2027–2056.

In addition, the proposed standards for low-voltage dry-type distribution transformers are projected to yield significant environmental benefits. DOE estimates that the proposed standards

would result in cumulative emission reductions (over the same period as for energy savings) of 77.57 million metric tons (“Mt”)<sup>15</sup> of carbon dioxide (“CO2”), 92.81 thousand tons of sulfur dioxide (“SO2”), 123.44 thousand tons of nitrogen oxides (“NOx”), 567.30 thousand tons of methane (“CH4”), 0.70 thousand tons of nitrous oxide (“N2O”), and 0.19 tons of mercury (“Hg”).<sup>16</sup>

<sup>15</sup> A metric ton is equivalent to 1.1 short tons. Results for emissions other than CO2 are presented in short tons.

<sup>16</sup> DOE calculated emissions reductions relative to the no-new-standards case, which reflects key assumptions in the *Annual Energy Outlook 2022* (“AEO2022”). AEO2022 represents current federal and state legislation and final implementation of regulations as of the time of its preparation. See section IV.K of this document for further discussion of AEO2022 assumptions that effect air pollutant emissions.

DOE estimates climate benefits from a reduction in greenhouse gases (GHG) using four different estimates of the social cost of CO<sub>2</sub> (“SC–CO<sub>2</sub>”), the social cost of methane (“SC–CH<sub>4</sub>”), and the social cost of nitrous oxide (“SC–N<sub>2</sub>O”). Together these represent the social cost of GHG (SC–GHG). DOE used interim SC–GHG values developed by an Interagency Working Group on the Social Cost of Greenhouse Gases (IWG),<sup>17</sup> as discussed in section IV.L of this document. For presentational purposes, the climate benefits associated with the average SC–GHG at a 3-percent discount rate are \$2.77 billion. (DOE does not have a single

central SC–GHG point estimate and it emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates.)

DOE also estimates health benefits from SO<sub>2</sub> and NO<sub>x</sub> emissions reductions.<sup>18</sup> DOE estimates the present value of the health benefits would be \$1.53 billion using a 7-percent discount rate, and \$4.91 billion using a 3-percent discount rate.<sup>19</sup> DOE is currently only monetizing (for SO<sub>2</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health

benefits from reductions in direct PM<sub>2.5</sub> emissions.

Table I.7 summarizes the monetized benefits and costs expected to result from the proposed standards for low-voltage dry-type distribution transformers. In the table, total benefits for both the 3-percent and 7-percent cases are presented using the average GHG social costs with 3-percent discount rate, but the Department emphasizes the importance and value of considering the benefits calculated using all four SC–GHG cases. The estimated total net benefits using each of the four cases are presented in section V.B.8 of this document.

TABLE I.7—SUMMARY OF MONETIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR LOW-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS (TSL 5)

	Billion (\$2021)
<b>3% discount rate</b>	
Consumer Operating Cost Savings .....	13.45
Climate Benefits * .....	2.77
Health Benefits ** .....	4.91
Total Benefits † .....	21.13
Consumer Incremental Product Costs ‡ .....	3.82
Net Benefits .....	17.31
<b>7% discount rate</b>	
Consumer Operating Cost Savings .....	4.69
Climate Benefits * (3% discount rate) .....	2.77
Health Benefits ** .....	1.53
Total Benefits † .....	8.99
Consumer Incremental Product Costs ‡ .....	2.05
Net Benefits .....	6.94

**Note:** This table presents the costs and benefits associated with distribution transformers shipped in 2027–2056. These results include benefits to consumers which accrue after 2056 from the products shipped in 2027–2056.

\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC–CO<sub>2</sub>), methane (SC–CH<sub>4</sub>), and nitrous oxide (SC–N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC–GHG). For presentational purposes of this table, the climate benefits associated with the average SC–GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC–GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this rule, DOE has reverted to its approach prior to the injunction and present monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. DOE is currently only monetizing (for SO<sub>2</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. The health benefits are presented at real discount rates of 3 and 7 percent. See section IV.L of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC–GHG with 3-percent discount rate, but the Department does not have a single central SC–GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates. See Table V.69 for net benefits using all four SC–GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

<sup>17</sup> See Interagency Working Group on Social Cost of Greenhouse Gases, Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide. Interim Estimates Under Executive Order 13990, Washington, DC, February 2021. <https://www.whitehouse.gov/wp-content/uploads/2021/02/>

*TechnicalSupportDocument\_SocialCostofCarbonMethaneNitrousOxide.pdf.*

<sup>18</sup> DOE estimated the monetized value of SO<sub>2</sub> and NO<sub>x</sub> emissions reductions associated with electricity savings using benefit per ton estimates

from the EPA. See section IV.L.2 of this document for further discussion.

<sup>19</sup> DOE estimates the economic value of these emissions reductions resulting from the considered TSLs for the purpose of complying with the requirements of Executive Order 12866.

The benefits and costs of the proposed standards can also be expressed in terms of annualized values. The monetary values for the total annualized net benefits are (1) the reduced consumer operating costs, minus (2) the increase in product purchase prices and installation costs, plus (3) the value of the benefits of GHG and NO<sub>x</sub> and SO<sub>2</sub> emission reductions, all annualized.<sup>20</sup> The national operating savings are domestic private U.S. consumer monetary savings that occur as a result of purchasing the covered products and

are measured for the lifetime of low-voltage dry-type distribution transformers shipped in 2027–2056. The benefits associated with reduced emissions achieved as a result of the proposed standards are also calculated based on the lifetime of low-voltage dry-type distribution transformers shipped in 2027–2056.

Estimates of annualized benefits and costs of the proposed standards are shown in Table I.8. The results under the primary estimate are as follows.

Using a 7-percent discount rate for consumer benefits and costs and health

benefits from reduced NO<sub>x</sub> and SO<sub>2</sub> emissions, and the 3-percent discount rate case for climate benefits from reduced GHG emissions, the estimated cost of the standards proposed in this rule is \$216.9 million per year in increased equipment costs, while the estimated annual benefits are \$495.0 million in reduced equipment operating costs, \$159.2 million in climate benefits, and \$162.1 million in health benefits. In this case, the net benefit would amount to \$599.4 million per year.

TABLE I.8—ANNUALIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR LOW-VOLTAGE DRY TYPE DISTRIBUTION TRANSFORMERS (TSL 5)

Category	Million (2021\$/year)		
	Primary estimate	Low-net-benefits estimate	High-net-benefits estimate
<b>3% discount rate</b>			
Consumer Operating Cost Savings .....	772.1	716.9	831.3
Climate Benefits * .....	159.2	151.6	165.9
Health Benefits ** .....	281.8	268.3	293.9
Total Benefits † .....	1,213.1	1,136.7	1,291.1
Consumer Incremental Product Costs ‡ .....	219.3	228.7	208.7
Net Benefits .....	993.8	908.0	1,082.4
<b>7% discount rate</b>			
Consumer Operating Cost Savings .....	495.0	462.8	528.7
Climate Benefits * (3% discount rate) .....	159.2	151.6	165.9
Health Benefits ** .....	162.1	154.9	168.2
Total Benefits † .....	816.3	769.3	862.8
Consumer Incremental Product Costs ‡ .....	216.9	225.2	207.3
Net Benefits .....	599.4	544.1	655.5

This table presents the costs and benefits associated with distribution transformers shipped in 2027–2056. These results include benefits to consumers which accrue after 2056 from the products shipped in 2027–2056.

\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC–CO<sub>2</sub>), methane (SC–CH<sub>4</sub>), and nitrous oxide (SC–N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC–GHG). For presentational purposes of this table, the climate benefits associated with the average SC–GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC–GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this rule, DOE has reverted to its approach prior to the injunction and present monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. The benefits are based on the low estimates of the monetized value. DOE is currently only monetizing (for SO<sub>x</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. See section IV.L of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC–GHG with 3-percent discount rate, but the Department does not have a single central SC–GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates. See Table V.69 for net benefits using all four SC–GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

### 3. Medium Voltage Dry-Type Distribution Transformers

DOE’s analyses indicate that the proposed energy conservation standards

for medium-voltage dry-type distribution transformers would save a significant amount of energy. Relative to the case without amended standards,

the lifetime energy savings for medium-voltage dry-type distribution transformers purchased in the 30-year period that begins in the anticipated

<sup>20</sup>To convert the time-series of costs and benefits into annualized values, DOE calculated a present value in 2021, the year used for discounting the NPV of total consumer costs and savings. For the

benefits, DOE calculated a present value associated with each year’s shipments in the year in which the shipments occur (e.g., 2030), and then discounted the present value from each year to 2021. Using the

present value, DOE then calculated the fixed annual payment over a 30-year period, starting in the compliance year, that yields the same present value.

year of compliance with the amended standards (2027–2056) amount to 0.12 quadrillion British thermal units (“Btu”), or quads.<sup>21</sup> This represents a fleet savings of 24 percent relative to the energy use of these products in the case without amended standards (referred to as the “no-new-standards case”).

The cumulative net present value (“NPV”) of total consumer benefits of the proposed standards for medium-voltage dry-type distribution transformers ranges from 0.04 billion (2021\$) (at a 7-percent discount rate) to 0.21 billion (2021\$) (at a 3-percent discount rate). This NPV expresses the estimated total value of future operating-cost savings minus the estimated increased product costs for medium-voltage dry-type distribution transformers purchased in 2027–2056.

In addition, the proposed standards for medium-voltage dry-type distribution transformers are projected to yield significant environmental benefits. DOE estimates that the proposed standards would result in cumulative emission reductions (over the same period as for energy savings)

of 3.71 million metric tons (“Mt”)<sup>22</sup> of carbon dioxide (“CO<sub>2</sub>”), 1.43 thousand tons of sulfur dioxide (“SO<sub>2</sub>”), 5.93 thousand tons of nitrogen oxides (“NO<sub>x</sub>”), 27.29 thousand tons of methane (“CH<sub>4</sub>”), 0.03 thousand tons of nitrous oxide (“N<sub>2</sub>O”), and 0.01 tons of mercury (“Hg”).<sup>23</sup>

DOE estimates climate benefits from a reduction in greenhouse gases (GHG) using four different estimates of the social cost of CO<sub>2</sub> (“SC–CO<sub>2</sub>”), the social cost of methane (“SC–CH<sub>4</sub>”), and the social cost of nitrous oxide (“SC–N<sub>2</sub>O”). Together these represent the social cost of GHG (SC–GHG). DOE used interim SC–GHG values developed by an Interagency Working Group on the Social Cost of Greenhouse Gases (IWG),<sup>24</sup> as discussed in IV.L of this document. For presentational purposes, the climate benefits associated with the average SC–GHG at a 3-percent discount rate are \$0.13 billion. (DOE does not have a single central SC–GHG point estimate and it emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates.)

DOE also estimates health benefits from SO<sub>2</sub> and NO<sub>x</sub> emissions reductions.<sup>25</sup> DOE estimates the present value of the health benefits would be \$0.07 billion using a 7-percent discount rate, and \$0.24 billion using a 3-percent discount rate.<sup>26</sup> DOE is currently only monetizing (for SO<sub>2</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions.

Table I.9 summarizes the monetized benefits and costs expected to result from the proposed standards for medium-voltage dry-type distribution transformers. In the table, total benefits for both the 3-percent and 7-percent cases are presented using the average GHG social costs with 3-percent discount rate, but the Department emphasizes the importance and value of considering the benefits calculated using all four SC–GHG cases. The estimated total net benefits using each of the four cases are presented in section V.B.8 of this document.

TABLE I.9—SUMMARY OF MONETIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR MEDIUM-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS (TSL 2)

	Billion (\$2021)
<b>3% discount rate</b>	
Consumer Operating Cost Savings .....	0.41
Climate Benefits * .....	0.13
Health Benefits ** .....	0.24
Total Benefits † .....	0.77
Consumer Incremental Product Costs ‡ .....	0.19
Net Benefits .....	0.58
<b>7% discount rate</b>	
Consumer Operating Cost Savings .....	0.14
Climate Benefits * (3% discount rate) .....	0.13
Health Benefits ** .....	0.07
Total Benefits † .....	0.35
Consumer Incremental Product Costs ‡ .....	0.10
Net Benefits .....	0.24

This table presents the costs and benefits associated with distribution transformers shipped in 2027–2056. These results include benefits to consumers which accrue after 2056 from the products shipped in 2027–2056.

<sup>21</sup> The quantity refers to full-fuel-cycle (“FFC”) energy savings. FFC energy savings includes the energy consumed in extracting, processing, and transporting primary fuels (i.e., coal, natural gas, petroleum fuels), and, thus, presents a more complete picture of the impacts of energy efficiency standards. For more information on the FFC metric, see section IV.H.2 of this document.

<sup>22</sup> A metric ton is equivalent to 1.1 short tons. Results for emissions other than CO<sub>2</sub> are presented in short tons.

<sup>23</sup> DOE calculated emissions reductions relative to the no-new-standards case, which reflects key

assumptions in the *Annual Energy Outlook 2022* (“AEO2022”). AEO2022 represents current federal and state legislation and final implementation of regulations as of the time of its preparation. See section IV.K of this document for further discussion of AEO2022 assumptions that effect air pollutant emissions.

<sup>24</sup> See Interagency Working Group on Social Cost of Greenhouse Gases, Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide. Interim Estimates Under Executive Order 13990, Washington, DC, February 2021. [https://www.whitehouse.gov/wp-content/uploads/2021/02/](https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf)

*TechnicalSupportDocument\_SocialCostofCarbonMethaneNitrousOxide.pdf*.

<sup>25</sup> DOE estimated the monetized value of SO<sub>2</sub> and NO<sub>x</sub> emissions reductions associated with electricity savings using benefit per ton estimates from the EPA. See section IV.L.2 of this document for further discussion.

<sup>26</sup> DOE estimates the economic value of these emissions reductions resulting from the considered TSLs for the purpose of complying with the requirements of Executive Order 12866.



\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC-CO<sub>2</sub>), methane (SC-CH<sub>4</sub>), and nitrous oxide (SC-N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC-GHG). For presentational purposes of this table, the climate benefits associated with the average SC-GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC-GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22-30087) granted the federal government's emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21-cv-1074-JDC-KK (W.D. La.). As a result of the Fifth Circuit's order, the preliminary injunction is no longer in effect, pending resolution of the federal government's appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from "adopting, employing, treating as binding, or relying upon" the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this rule, DOE has reverted to its approach prior to the injunction and present monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. DOE is currently only monetizing (for SO<sub>2</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. The health benefits are presented at real discount rates of 3 and 7 percent. See section IV.L of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC-GHG with 3-percent discount rate, but the Department does not have a single central SC-GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC-GHG estimates. See Table V.69 for net benefits using all four SC-GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

The benefits and costs of the proposed standards can also be expressed in terms of annualized values. The monetary values for the total annualized net benefits are (1) the reduced consumer operating costs, minus (2) the increase in product purchase prices and installation costs, plus (3) the value of the benefits of GHG and NO<sub>x</sub> and SO<sub>2</sub> emission reductions, all annualized.<sup>27</sup> The national operating savings are domestic private U.S. consumer monetary savings that occur as a result of purchasing the covered equipment

and are measured for the lifetime of medium-voltage dry-type distribution transformers shipped in 2027–2056. The benefits associated with reduced emissions achieved as a result of the proposed standards are also calculated based on the lifetime of medium-voltage dry-type distribution transformers shipped in 2027–2056.

Estimates of annualized benefits and costs of the proposed standards are shown in Table I.10. The results under the primary estimate are as follows.

Using a 7-percent discount rate for consumer benefits and costs and health

benefits from reduced NO<sub>x</sub> and SO<sub>2</sub> emissions, and the 3-percent discount rate case for climate benefits from reduced GHG emissions, the estimated cost of the standards proposed in this rule is \$10.8 million per year in increased equipment costs, while the estimated annual benefits are \$14.9 million in reduced equipment operating costs, \$7.6 million in climate benefits, and \$7.8 million in health benefits. The net benefit would amount to \$19.5 million per year.

TABLE I.10—ANNUALIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR MEDIUM-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS (TSL 2)

Category	Million (2021\$/year)		
	Primary estimate	Low-net-benefits estimate	High-net-benefits estimate
<b>3% discount rate</b>			
Consumer Operating Cost Savings .....	23.3	22.2	25.8
Climate Benefits * .....	7.6	7.5	8.2
Health Benefits ** .....	13.5	13.2	14.5
Total Benefits † .....	44.4	42.9	48.5
Consumer Incremental Product Costs ‡ .....	11.0	11.7	10.7
Net Benefits .....	33.5	31.1	37.7
<b>7% discount rate</b>			
Consumer Operating Cost Savings .....	14.9	14.3	16.4
Climate Benefits * (3% discount rate) .....	7.6	7.5	8.2
Health Benefits ** .....	7.8	7.6	8.3
Total Benefits † .....	30.3	29.4	32.9
Consumer Incremental Product Costs ‡ .....	10.8	11.6	10.6
Net Benefits .....	19.5	17.9	22.2

This table presents the costs and benefits associated with distribution transformers shipped in 2027–2056. These results include benefits to consumers which accrue after 2056 from the products shipped in 2027–2056.

<sup>27</sup>To convert the time-series of costs and benefits into annualized values, DOE calculated a present value in 2021, the year used for discounting the NPV of total consumer costs and savings. For the

benefits, DOE calculated a present value associated with each year's shipments in the year in which the shipments occur (e.g., 2030), and then discounted the present value from each year to 2021. Using the

present value, DOE then calculated the fixed annual payment over a 30-year period, starting in the compliance year, that yields the same present value.

\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC-CO<sub>2</sub>), methane (SC-CH<sub>4</sub>), and nitrous oxide (SC-N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC-GHG). For presentational purposes of this table, the climate benefits associated with the average SC-GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC-GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22-30087) granted the federal government's emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21-cv-1074-JDC-KK (W.D. La.). As a result of the Fifth Circuit's order, the preliminary injunction is no longer in effect, pending resolution of the federal government's appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from "adopting, employing, treating as binding, or relying upon" the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this rule, DOE has reverted to its approach prior to the injunction and present monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. The benefits are based on the low estimates of the monetized value. DOE is currently only monetizing (for SO<sub>x</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. See section IV.L of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC-GHG with 3-percent discount rate, but the Department does not have a single central SC-GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC-GHG estimates. See Table V.69 for net benefits using all four SC-GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

DOE's analysis of the national impacts of the proposed standards is described in sections IV.H, IV.K and IV.L of this document.

**D. Conclusion**

DOE has tentatively concluded that the proposed standards represent the maximum improvement in energy efficiency that is technologically feasible and economically justified, and would result in the significant conservation of energy. Specifically,

with regards to technological feasibility products achieving these standard levels are already commercially available for all product classes covered by this proposal. As for economic justification, DOE's analysis shows that for each equipment class the benefits of the proposed standards exceed the burdens of the proposed standards. Using a 7-percent discount rate for consumer benefits and costs and NO<sub>x</sub> and SO<sub>2</sub> reduction benefits, and a 3-percent

discount rate case for GHG social costs, the estimated annual cost of the proposed standards for distribution transformers is \$652.5 million per year in increased distribution transformer costs, while the estimated annual benefits are \$961.8 million in reduced distribution transformer operating costs, \$664.2 million in climate benefits and \$665.2 million in health benefits. The net benefit amounts to \$1,638.7 million per year.

**TABLE I.11—ANNUALIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR ALL DISTRIBUTION TRANSFORMERS AT PROPOSED STANDARD LEVELS**

Category	Million (2021\$/year)		
	Primary estimate	Low-net-benefits estimate	High-net-benefits estimate
<b>3% discount rate</b>			
Consumer Operating Cost Savings .....	1,528.9	1,426.0	1,647.0
Climate Benefits* .....	664.2	638.0	693.6
Health Benefits** .....	1,189.6	1,142.0	1,243.2
Total Benefits † .....	3,382.8	3,205.9	3,583.8
Consumer Incremental Product Costs ‡ .....	659.8	689.4	632.6
Net Benefits .....	2,723.1	2,516.4	2,951.1
<b>7% discount rate</b>			
Consumer Operating Cost Savings .....	961.8	902.8	1,027.3
Climate Benefits* (3% discount rate) .....	664.2	638.0	693.6
Health Benefits** .....	665.2	640.4	691.8
Total Benefits † .....	2,291.3	2,181.2	2,412.7
Consumer Incremental Product Costs ‡ .....	652.5	678.9	627.8
Net Benefits .....	1,638.7	1,502.5	1,784.9

**Note:** This table presents the costs and benefits associated with distribution transformers shipped in 2027–2056. These results include benefits to consumers which accrue after 2056 from the products shipped in 2027–2056.

\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC-CO<sub>2</sub>), methane (SC-CH<sub>4</sub>), and nitrous oxide (SC-N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC-GHG). For presentational purposes of this table, the climate benefits associated with the average SC-GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC-GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22-30087) granted the Federal government's emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21-cv-1074-JDC-KK (W.D. La.). As a result of the Fifth Circuit's order, the preliminary injunction is no longer in effect, pending resolution of the Federal government's appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from "adopting, employing, treating as binding, or relying upon" the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. In the absence of further intervening court orders, DOE will revert to its approach prior to the injunction and present monetized benefits where appropriate and permissible under law.

\*\*Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. The benefits are based on the low estimates of the monetized value. DOE is currently only monetizing (for SO<sub>x</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. See section IV.L of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC–GHG with 3-percent discount rate, but the Department does not have a single central SC–GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates. See Table V.69 for net benefits using all four SC–GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

TABLE I.12—SUMMARY OF MONETIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR ALL DISTRIBUTION TRANSFORMERS AT PROPOSED STANDARD LEVELS

	Billion (\$2021)
<b>3% discount rate</b>	
Consumer Operating Cost Savings .....	26.63
Climate Benefits * .....	11.56
Health Benefits ** .....	20.72
Total Benefits † .....	58.91
Consumer Incremental Product Costs ‡ .....	11.49
Net Benefits .....	47.42
<b>7% discount rate</b>	
Consumer Operating Cost Savings .....	9.11
Climate Benefits * (3% discount rate) .....	11.56
Health Benefits ** .....	6.29
Total Benefits † .....	26.97
Consumer Incremental Product Costs ‡ .....	6.17
Net Benefits .....	20.79

This table presents the costs and benefits associated with distribution transformers shipped in 2027–2056. These results include benefits to consumers which accrue after 2056 from the products shipped in 2027–2056.

\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC–CO<sub>2</sub>), methane (SC–CH<sub>4</sub>), and nitrous oxide (SC–N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC–GHG). For presentational purposes of this table, the climate benefits associated with the average SC–GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC–GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the Federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the Federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. In the absence of further intervening court orders, DOE will revert to its approach prior to the injunction and present monetized benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. DOE is currently only monetizing (for SO<sub>2</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. The health benefits are presented at real discount rates of 3 and 7 percent. See section IV.L of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC–GHG with 3-percent discount rate, but the Department does not have a single central SC–GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates. See Table V.69 for net benefits using all four SC–GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

The significance of energy savings offered by a new or amended energy conservation standard cannot be determined without knowledge of the specific circumstances surrounding a given rulemaking.<sup>28</sup> For example, some covered products and equipment, including distribution transformers, have substantial energy consumption occur during periods of peak energy demand. The impacts of these products on the energy infrastructure can be more pronounced than products with

relatively constant demand. Accordingly, DOE evaluates the significance of energy savings on a case-by-case basis.

As previously mentioned, the standards are projected to result in estimated national energy savings of 10.60 quad. Based on the amount of FFC savings, the corresponding reduction in GHG emissions, and need to confront the global climate crisis, DOE has initially determined the energy savings from the proposed standard levels are “significant” within the meaning of 42 U.S.C. 6295(o)(3)(B). A more detailed discussion of the basis for these tentative conclusions is contained in the

remainder of this document and the accompanying TSD.

DOE also considered more-stringent energy efficiency levels as potential standards, and is still considering them in this rulemaking. However, DOE has tentatively concluded that the potential burdens of the more-stringent energy efficiency levels would outweigh the projected benefits.

Based on consideration of the public comments DOE receives in response to this document and related information collected and analyzed during the course of this rulemaking effort, DOE may adopt energy efficiency levels presented in this document that are either higher or lower than the proposed

<sup>28</sup> Procedures, Interpretations, and Policies for Consideration in New or Revised Energy Conservation Standards and Test Procedures for Consumer Products and Commercial/Industrial Equipment, 86 FR 70892, 70901 (Dec. 13, 2021).

standards, or some combination of level(s) that incorporate the proposed standards in part.

## II. Introduction

The following section briefly discusses the statutory authority underlying this proposed rule, as well as some of the relevant historical background related to the establishment of standards for distribution transformers.

### A. Authority

EPCA authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. Title III, Part B of EPCA (42 U.S.C. 6291–6309, as codified), established the Energy Conservation Program for “Consumer Products Other Than Automobiles.” Title III, Part C of EPCA (42 U.S.C. 6311–6317, as codified), added by Public Law 95–619, Title IV, section 411(a), established the Energy Conservation Program for Certain Industrial Equipment. The Energy Policy Act of 1992, Public Law 102–486, amended EPCA and directed DOE to prescribe energy conservation standards for those distribution transformers for which DOE determines such standards would be technologically feasible, economically justified, and would result in significant energy savings. (42 U.S.C. 6317(a)) The Energy Policy Act of 2005, Public Law 109–58, amended EPCA to establish energy conservation standards for low-voltage dry-type distribution transformers. (42 U.S.C. 6295(y))

EPCA further provides that, not later than 6 years after the issuance of any final rule establishing or amending a standard, DOE must publish either a notice of determination that standards for the product do not need to be amended, or a NOPR including new proposed energy conservation standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6316(e)(1); 42 U.S.C. 6295(m)(1))

The energy conservation program under EPCA consists essentially of four parts: (1) testing, (2) labeling, (3) the establishment of Federal energy conservation standards, and (4) certification and enforcement procedures. Relevant provisions of EPCA specifically include definitions (42 U.S.C. 6311; 42 U.S.C. 6291), test procedures (42 U.S.C. 6314; 42 U.S.C. 6293), labeling provisions (42 U.S.C. 6315; 42 U.S.C. 6294), energy conservation standards (42 U.S.C. 6313; 42 U.S.C. 6295), and the authority to require information and reports from manufacturers (42 U.S.C. 6316; 42 U.S.C. 6296).

Federal energy efficiency requirements for covered equipment established under EPCA generally supersede State laws and regulations concerning energy conservation testing, labeling, and standards. (42 U.S.C. 6316(a) and (b); 42 U.S.C. 6297) DOE may, however, grant waivers of Federal preemption for particular State laws or regulations, in accordance with the procedures and other provisions set forth under EPCA. (See 42 U.S.C. 6316(a) (applying the preemption waiver provisions of 42 U.S.C. 6297))

Subject to certain criteria and conditions, DOE is required to develop test procedures to measure the energy efficiency, energy use, or estimated annual operating cost of each covered equipment. (42 U.S.C. 6316(a), 42 U.S.C. 6295(o)(3)(A) and 42 U.S.C. 6295(r)) Manufacturers of covered equipment must use the Federal test procedures as the basis for: (1) certifying to DOE that their equipment complies with the applicable energy conservation standards adopted pursuant to EPCA (42 U.S.C. 6316(a); 42 U.S.C. 6295(s)), and (2) making representations about the efficiency of that equipment (42 U.S.C. 6314(d)). Similarly, DOE must use these test procedures to determine whether the equipment complies with relevant standards promulgated under EPCA. (42 U.S.C. 6316(a); 42 U.S.C. 6295(s)) The DOE test procedures for distribution transformers appear at title 10 of the Code of Federal Regulations (“CFR”) part 431, subpart K, appendix A.

DOE must follow specific statutory criteria for prescribing new or amended standards for covered equipment, including distribution transformers. Any new or amended standard for a covered product must be designed to achieve the maximum improvement in energy efficiency that the Secretary of Energy determines is technologically feasible and economically justified. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(A) and 42 U.S.C. 6295(o)(3)(B)) Furthermore, DOE may not adopt any standard that would not result in the significant conservation of energy. (42 U.S.C. 6295(o)(3))

Moreover, DOE may not prescribe a standard: (1) for certain products, including distribution transformers, if no test procedure has been established for the product, or (2) if DOE determines by rule that the standard is not technologically feasible or economically justified. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(3)(A)–(B)) In deciding whether a proposed standard is economically justified, DOE must determine whether the benefits of the standard exceed its burdens. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(B)(i)) DOE must make this

determination after receiving comments on the proposed standard, and by considering, to the greatest extent practicable, the following seven statutory factors:

(1) The economic impact of the standard on manufacturers and consumers of the products subject to the standard;

(2) The savings in operating costs throughout the estimated average life of the covered products in the type (or class) compared to any increase in the price, initial charges, or maintenance expenses for the covered products that are likely to result from the standard;

(3) The total projected amount of energy (or as applicable, water) savings likely to result directly from the standard;

(4) Any lessening of the utility or the performance of the covered products likely to result from the standard;

(5) The impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the standard;

(6) The need for national energy and water conservation; and

(7) Other factors the Secretary of Energy (“Secretary”) considers relevant. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(B)(i)(I)–(VII))

Further, EPCA establishes a rebuttable presumption that a standard is economically justified if the Secretary finds that the additional cost to the consumer of purchasing a product complying with an energy conservation standard level will be less than three times the value of the energy savings during the first year that the consumer will receive as a result of the standard, as calculated under the applicable test procedure. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(B)(iii))

EPCA also contains what is known as an “anti-backsliding” provision, which prevents the Secretary from prescribing any amended standard that either increases the maximum allowable energy use or decreases the minimum required energy efficiency of a covered product. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(1)) Also, the Secretary may not prescribe an amended or new standard if interested persons have established by a preponderance of the evidence that the standard is likely to result in the unavailability in the United States in any covered product type (or class) of performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as those generally available in the United States. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(4))

Additionally, EPCA specifies requirements when promulgating an

energy conservation standard for a covered product that has two or more product classes. DOE must specify a different standard level for a type or class of product that has the same function or intended use, if DOE determines that products within such group: (A) consume a different kind of energy from that consumed by other covered products within such type (or class); or (B) have a capacity or other performance-related feature which other products within such type (or class) do not have and such feature justifies a

higher or lower standard. (42 U.S.C. 6316(a); 42 U.S.C. 6295(q)(1)) In determining whether a performance-related feature justifies a different standard for a group of products, DOE must consider such factors as the utility to the consumer of the feature and other factors DOE deems appropriate. *Id.* Any rule prescribing such a standard must include an explanation of the basis on which such higher or lower level was established. (42 U.S.C. 6316(a); 42 U.S.C. 6295(q)(2))

*B. Background*

1. Current Standards

In a final rule published on April 18, 2013 (“April 2013 Standards Final Rule”), DOE prescribed the current energy conservation standards for distribution transformers manufactured on and after January 1, 2016. 78 FR 23336, 23433. These standards are set forth in DOE’s regulations at 10 CFR 431.196 and are repeated in Table II.1, Table II.2, Table II.3.

TABLE II.1—FEDERAL ENERGY CONSERVATION STANDARDS FOR LOW-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS

Single-phase		Three-phase	
kVA	Efficiency (%)	kVA	Efficiency (%)
15	97.70	15	97.89
25	98.00	30	98.23
37.5	98.20	45	98.40
50	98.30	75	98.60
75	98.50	112.5	98.74
100	98.60	150	98.83
167	98.70	225	98.94
250	98.80	300	99.02
333	98.90	500	99.14
		750	99.23
		1,000	99.28

TABLE II.2—FEDERAL ENERGY CONSERVATION STANDARDS FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS

Single-phase		Three-phase	
kVA	Efficiency (%)	kVA	Efficiency (%)
10	98.70	15	98.65
15	98.82	30	98.83
25	98.95	45	98.92
37.5	99.05	75	99.03
50	99.11	112.5	99.11
75	99.19	150	99.16
100	99.25	225	99.23
167	99.33	300	99.27
250	99.39	500	99.35
333	99.43	750	99.40
500	99.49	1,000	99.43
667	99.52	1,500	99.48
833	99.55	2,000	99.51
		2,500	99.52

TABLE II.3—FEDERAL ENERGY CONSERVATION STANDARDS FOR MEDIUM-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS

Single-phase				Three-phase			
kVA	BIL			kVA	BIL		
	20–45 kV	46–95 kV	≥96 kV		20–45 kV	46–95 kV	≥96 kV
	Efficiency (%)	Efficiency (%)	Efficiency (%)		Efficiency (%)	Efficiency (%)	Efficiency (%)
15	98.1	97.86		15	97.5	97.18	
25	98.33	98.12		30	97.9	97.63	
37.5	98.49	98.3		45	98.1	97.86	
50	98.6	98.42		75	98.33	98.13	
75	98.73	98.57	98.53	112.5	98.52	98.36	
100	98.82	98.67	98.63	150	98.65	98.51	

TABLE II.3—FEDERAL ENERGY CONSERVATION STANDARDS FOR MEDIUM-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS—Continued

kVA	Single-phase			kVA	Three-phase		
	BIL				BIL		
	20–45 kV	46–95 kV	≥96 kV		20–45 kV	46–95 kV	≥96 kV
	Efficiency (%)	Efficiency (%)	Efficiency (%)		Efficiency (%)	Efficiency (%)	Efficiency (%)
167	98.96	98.83	98.80	225	98.82	98.69	98.57
250	99.07	98.95	98.91	300	98.93	98.81	98.69
333	99.14	99.03	98.99	500	99.09	98.99	98.89
500	99.22	99.12	99.09	750	99.21	99.12	99.02
667	99.27	99.18	99.15	1,000	99.28	99.2	99.11
833	99.31	99.23	99.20	1,500	99.37	99.3	99.21
				2,000	99.43	99.36	99.28
				2,500	99.47	99.41	99.33

2. History of Standards Rulemaking for Distribution Transformers

On June 18, 2019, DOE published notice that it was initiating an early assessment review to determine whether any new or amended standards would satisfy the relevant requirements of EPCA for a new or amended energy conservation standard for distribution transformers and a request for information (“RFI”). 84 FR 28239 (“June 2019 Early Assessment Review RFI”).

On August 27, 2021, DOE published a notification of a webinar and availability of a preliminary technical support document, which announced

the availability of its analysis for distribution transformers. 86 FR 48058 (“August 2021 Preliminary Analysis”) The purpose of the August 2021 Preliminary Analysis was to make publicly available the initial technical and economic analyses conducted for distribution transformers, and present initial results of those analyses. DOE did not propose new or amended standards for distribution transformers at that time. The initial technical support document (“TSD”) and accompanying analytical spreadsheets for the August 2021 Preliminary Analysis provided the analyses DOE undertook to examine the potential for amending energy

conservation standards for distribution transformers and provided preliminary discussions in response to a number of issues raised by comments to the June 2019 Early Assessment Review RFI. It described the analytical methodology that DOE used, and each analysis DOE had performed.

On November 11, 2021, DOE published a notice reopening the comment period an additional 30 days. 86 FR 63318.

DOE received comments in response to the August 2021 Preliminary Analysis from the interested parties listed in Table II.4.

TABLE II.4—AUGUST 2021 PRELIMINARY ANALYSIS WRITTEN COMMENTS

Commenter(s)	Abbreviation	Docket No.	Commenter type
Electric Research and Manufacturing Cooperative, Inc	ERMCO	45	Manufacturer.
Powersmiths, Inc	Powersmiths	46	Manufacturer.
Copper Development Association	CDA	47	Trade Organization.
Schneider Electric	Schneider	49	Manufacturer.
National Electrical Manufacturers Association	NEMA	50	Trade Organization.
Northwest Energy Efficiency Alliance	NEEA	51	Efficiency Organization.
Appliance Standards Awareness Project, American Council for an Energy-Efficient Economy, Natural Resources Defense Council.	Efficiency Advocates	52	Efficiency Organization.
Metglas, Inc	Metglas	53	Steel Manufacturer.
Carte International, Inc	Carte	54	Manufacturer.
Eaton Corporation	Eaton	55	Manufacturer.
Edison Electric Institute	EEL	56	Utilities.
Cleveland-Cliffs Steel Corporation	Cliffs	57	Steel Manufacturer.
Greenville Electric Utility System	GEUS	58	Utilities.
Howard Industries, Inc	Howard	59	Manufacturer.

A parenthetical reference at the end of a comment quotation or paraphrase provides the location of the item in the public record.<sup>29</sup>

<sup>29</sup> The parenthetical reference provides a reference for information located in the docket of DOE’s rulemaking to develop energy conservation standards for distribution transformers. (Docket No. EERE–2019–BT–STD–0018, which is maintained at [www.regulations.gov](http://www.regulations.gov)). The references are arranged

C. Deviation From Appendix A

In accordance with section 3(a) of 10 CFR part 430, subpart C, appendix A (“appendix A”), DOE notes that it is deviating from the provision in appendix A regarding the NOPR stage for an energy conservation standard

as follows: (commenter name, comment docket ID number, page of that document).

rulemaking. Section 6(f)(2) of appendix A specifies that the length of the public comment period for a NOPR will vary depending upon the circumstances of the particular rulemaking, but will not be less than 75 calendar days. For this NOPR, DOE is providing a 60-day comment period, as required by EPCA. 42 U.S.C. 6316(a); 42 U.S.C. 6295(p). As stated previously, DOE requested

comment in the June 2019 Early Assessment Review RFI on the technical and economic analyses and provided stakeholders a 45-day comment period. 84 FR 28239. Additionally, DOE provided a 75-day comment period for the August 2021 Preliminary Analysis. 86 FR 48058. DOE also reopened the comment period for the August 2021 Preliminary Analysis for an additional 30-days. 86 FR 63318. DOE has relied on many of the same analytical assumptions and approaches as used in the preliminary assessment presented in the TSD. Therefore, DOE believes a 60-day comment period is appropriate and will provide interested parties with a meaningful opportunity to comment on the proposed rule.

### III. General Discussion

DOE developed this proposal after considering oral and written comments, data, and information from interested parties that represent a variety of interests. The following discussion addresses issues raised by these commenters.

#### A. Equipment Classes and Scope of Coverage

When evaluating and establishing energy conservation standards, DOE divides covered products into equipment classes by the type of energy used or by capacity or other performance-related features that justify differing standards. In making a determination whether a performance-related feature justifies a different standard, DOE must consider such factors as the utility of the feature to the consumer and other factors DOE determines are appropriate. (42 U.S.C. 6316(a); 42 U.S.C. 6295(q))

The distribution transformer equipment classes considered in this proposed rule are discussed in further detail in section IV.A.2 of this document. This proposed rule covers distribution transformers which are currently defined as a transformer that (1) has an input voltage of 34.5 kV or less; (2) has an output voltage of 600 V or less; (3) is rated for operation at a frequency of 60 Hz; and (4) Has a capacity of 10 kVA to 2500 kVA for liquid-immersed units and 15 kVA to 2500 kVA for dry-type units; but (5) The term “distribution transformer” does not include a transformer that is an autotransformer, drive (isolation) transformer, grounding transformer, machine-tool (control transformer, nonventilated transformer, rectified transformer, regulating transformer, sealed transformer, special-impedance transformer, testing transformer, transformer with tap range of 20 percent

or more; uninterruptible power supply transformer; or welding transformer. 10 CFR 431.192

The scope of coverage of this proposed rule is discussed in further detail in section IV.A.1 of this document.

#### B. Test Procedure

EPCA sets forth generally applicable criteria and procedures for DOE’s adoption and amendment of test procedures. (42 U.S.C. 6314(a)) Manufacturers of covered products must use these test procedures to certify to DOE that their product complies with energy conservation standards and to quantify the efficiency of their product. DOE’s current energy conservation standards for distribution transformers are expressed in terms of percentage efficiency at rated per-unit load (PUL). (See 10 CFR 431.193; 10 CFR part 431, subpart K, appendix A (“appendix A”).)

On September 14, 2021, DOE published a test procedure final rule for distribution transformers that revised definitions for certain terms, updated provisions based on the latest versions of relevant industry test standards, maintained PUL for the certification of efficiency and added provisions for representing efficiency at alternative PULs and reference temperatures. 89 FR 51230 (“September 2021 TP Final Rule”). DOE determined that the amendments to the test procedure adopted in the September 2021 TP Final Rule do not alter the measured efficiency of distribution transformers or require retesting or recertification solely as a result of DOE’s adoption of the amendments to the test procedure. *Id.* at 89 FR 51249.

#### C. Technological Feasibility

##### 1. General

In each energy conservation standards rulemaking, DOE conducts a screening analysis based on information gathered on all current technology options and prototype designs that could improve the efficiency of the products or equipment that are the subject of the rulemaking. As the first step in such an analysis, DOE develops a list of technology options for consideration in consultation with manufacturers, design engineers, and other interested parties. DOE then determines which of those means for improving efficiency are technologically feasible. DOE considers technologies incorporated in commercially available products or in working prototypes to be technologically feasible. 10 CFR 431.4; 10 CFR part 430, subpart C, appendix A,

sections 6(b)(3)(i) and 7(b)(1) (“Process Rule”).

After DOE has determined that particular technology options are technologically feasible, it further evaluates each technology option in light of the following additional screening criteria: (1) practicability to manufacture, install, and service; (2) adverse impacts on product utility or availability; (3) adverse impacts on health or safety, and (4) unique-pathway proprietary technologies. 10 CFR 431.4; Sections 6(c)(3)(ii)–(v) and 7(b)(2)–(5) of the Process Rule. Section IV.B of this document discusses the results of the screening analysis for distribution transformers, particularly the designs DOE considered, those it screened out, and those that are the basis for the standards considered in this proposed rule. For further details on the screening analysis for this proposed rule, see chapter 4 of the NOPR technical support document (“TSD”).

##### 2. Maximum Technologically Feasible Levels

When DOE proposes to adopt an amended standard for a type or class of covered product, it must determine the maximum improvement in energy efficiency or maximum reduction in energy use that is technologically feasible for such product. (42 U.S.C. 6316(a); 42 U.S.C. 6295(p)(1)) Accordingly, in the engineering analysis, DOE determined the maximum technologically feasible (“max-tech”) improvements in energy efficiency for distribution transformers, using the design parameters for the most efficient products available on the market or in working prototypes. The max-tech levels that DOE determined for this rulemaking are described in section IV.C.2.e of this proposed rule and in chapter 5 of the NOPR TSD.

#### D. Energy Savings

##### 1. Determination of Savings

For each trial standard level (“TSL”), DOE projected energy savings from application of the TSL to distribution transformer purchased in the 30-year period that begins in the year of compliance with the proposed standards (2027–2056).<sup>30</sup> The savings are measured over the entire lifetime of distribution transformers purchased in the previous 30-year period.<sup>31</sup> DOE

<sup>30</sup> Each TSL is composed of specific efficiency levels for each product class. The TSLs considered for this NOPR are described in section V.A of this document. DOE conducted a sensitivity analysis that considers impacts for products shipped in a 9-year period.

<sup>31</sup> Savings are determined for equipment shipped over the 30-year analysis period of 2027 through

quantified the energy savings attributable to each TSL as the difference in energy consumption between each standards case and the no-new-standards case. The no-new-standards case represents a projection of energy consumption that reflects how the market for a product would likely evolve in the absence of amended energy conservation standards.

DOE used its national impact analysis (“NIA”) model to estimate national energy savings (“NES”) from potential amended or new standards for distribution transformers. The NIA model (described in section IV.H of this document) calculates energy savings in terms of site energy, which is the energy directly consumed by products at the locations where they are used. For electricity, DOE reports national energy savings in terms of primary energy savings, which is the savings in the energy that is used to generate and transmit the site electricity. DOE also calculates NES in terms of FFC energy savings. The FFC metric includes the energy consumed in extracting, processing, and transporting primary fuels (*i.e.*, coal, natural gas, petroleum fuels), and thus presents a more complete picture of the impacts of energy conservation standards.<sup>32</sup> DOE’s approach is based on the calculation of an FFC multiplier for each of the energy types used by covered products or equipment. For more information on FFC energy savings, see section IV.H.2 of this document.

## 2. Significance of Savings

To adopt any new or amended standards for a covered product, DOE must determine that such action would result in significant energy savings. (42 U.S.C. 6295(o)(3)(B))

The significance of energy savings offered by a new or amended energy conservation standard cannot be determined without knowledge of the specific circumstances surrounding a given rulemaking.<sup>33</sup> For example, some covered products and equipment have most of their energy consumption occur during periods of peak energy demand. The impacts of these products on the

energy infrastructure can be more pronounced than products with relatively constant demand.

Accordingly, DOE evaluates the significance of energy savings on a case-by-case basis, taking into account the significance of cumulative FFC national energy savings, the cumulative FFC emissions reductions, and the need to confront the global climate crisis, among other factors. Based on the amount of FFC savings, the corresponding reduction in emissions, and need to confront the global climate crisis, DOE has initially determined the energy savings from the proposed standard levels are “significant” within the meaning of 42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(3)(B).

## E. Economic Justification

### 1. Specific Criteria

As noted previously, EPCA provides seven factors to be evaluated in determining whether a potential energy conservation standard is economically justified. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(B)(i)–(VII)) The following sections discuss how DOE has addressed each of those seven factors in this rulemaking.

#### a. Economic Impact on Manufacturers and Consumers

In determining the impacts of a potential amended standard on manufacturers, DOE conducts an MIA, as discussed in section IV.J of this document. DOE first uses an annual cash-flow approach to determine the quantitative impacts. This step includes both a short-term assessment—based on the cost and capital requirements during the period between when a regulation is issued and when entities must comply with the regulation—and a long-term assessment over a 30-year period. The industry-wide impacts analyzed include (1) INPV, which values the industry on the basis of expected future cash flows, (2) cash flows by year, (3) changes in revenue and income, and (4) other measures of impact, as appropriate. Second, DOE analyzes and reports the impacts on different types of manufacturers, including impacts on small manufacturers. Third, DOE considers the impact of standards on domestic manufacturer employment and manufacturing capacity, as well as the potential for standards to result in plant closures and loss of capital investment. Finally, DOE takes into account cumulative impacts of various DOE regulations and other regulatory requirements on manufacturers.

For individual consumers, measures of economic impact include the changes

in LCC and PBP associated with new or amended standards. These measures are discussed further in the following section. For consumers in the aggregate, DOE also calculates the national net present value of the consumer costs and benefits expected to result from particular standards. DOE also evaluates the impacts of potential standards on identifiable subgroups of consumers that may be affected disproportionately by a standard.

#### b. Savings in Operating Costs Compared To Increase in Price (LCC and PBP)

EPCA requires DOE to consider the savings in operating costs throughout the estimated average life of the covered product in the type (or class) compared to any increase in the price of, or in the initial charges for, or maintenance expenses of, the covered product that are likely to result from a standard. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(B)(i)(II)) DOE conducts this comparison in its LCC and PBP analysis.

The LCC is the sum of the purchase price of a product (including its installation) and the operating expense (including energy, maintenance, and repair expenditures) discounted over the lifetime of the product. The LCC analysis requires a variety of inputs, such as product prices, product energy consumption, energy prices, maintenance and repair costs, product lifetime, and discount rates appropriate for consumers. To account for uncertainty and variability in specific inputs, such as product lifetime and discount rate, DOE uses a distribution of values, with probabilities attached to each value.

The PBP is the estimated amount of time (in years) it takes consumers to recover the increased purchase cost (including installation) of a more-efficient product through lower operating costs. DOE calculates the PBP by dividing the change in purchase cost due to a more-stringent standard by the change in annual operating cost for the year that standards are assumed to take effect.

For its LCC and PBP analysis, DOE assumes that consumers will purchase the covered products in the first year of compliance with new or amended standards. The LCC savings for the considered efficiency levels are calculated relative to the case that reflects projected market trends in the absence of new or amended standards. DOE’s LCC and PBP analysis is discussed in further detail in section IV.F of this document.

2056. Distribution transformers have a maximum lifetime of 60 years; therefore savings are determined for equipment that survive, and accrue savings through 2115.

<sup>32</sup> The FFC metric is discussed in DOE’s statement of policy and notice of policy amendment. 76 FR 51282 (Aug. 18, 2011), as amended at 77 FR 49701 (Aug. 17, 2012).

<sup>33</sup> The numeric threshold for determining the significance of energy savings established in a final rule published on February 14, 2020 (85 FR 8626, 8670), was subsequently eliminated in a final rule published on December 12, 2021 (86 FR 70892, 70906).



### c. Energy Savings

Although significant conservation of energy is a separate statutory requirement for adopting an energy conservation standard, EPCA requires DOE, in determining the economic justification of a standard, to consider the total projected energy savings that are expected to result directly from the standard. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(B)(i)(III)) As discussed in section III.D of this document, DOE uses the NIA models to project national energy savings.

### d. Lessening of Utility or Performance of Products

In establishing product classes and in evaluating design options and the impact of potential standard levels, DOE evaluates potential standards that would not lessen the utility or performance of the considered products. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(B)(i)(IV)) Based on data available to DOE, the standards proposed in this document would not reduce the utility or performance of the products under consideration in this rulemaking.

### e. Impact of Any Lessening of Competition

EPCA directs DOE to consider the impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from a proposed standard. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(B)(i)(V)) It also directs the Attorney General to determine the impact, if any, of any lessening of competition likely to result from a proposed standard and to transmit such determination to the Secretary within 60 days of the publication of a proposed rule, together with an analysis of the nature and extent of the impact. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(B)(ii)) DOE will transmit a copy of this proposed rule to the Attorney General with a request that the Department of Justice (“DOJ”) provide its determination on this issue. DOE will publish and respond to the Attorney General’s determination in the final rule. DOE invites comment from the public regarding the competitive impacts that are likely to result from this proposed rule. In addition, stakeholders may also provide comments separately to DOJ regarding these potential impacts. See the **ADDRESSES** section for information to send comments to DOJ.

### f. Need for National Energy Conservation

DOE also considers the need for national energy and water conservation in determining whether a new or

amended standard is economically justified. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(B)(i)(VI)) The energy savings from the proposed standards are likely to provide improvements to the security and reliability of the Nation’s energy system. Reductions in the demand for electricity also may result in reduced costs for maintaining the reliability of the Nation’s electricity system. DOE conducts a utility impact analysis to estimate how standards may affect the Nation’s needed power generation capacity, as discussed in section IV.M of this document.

DOE maintains that environmental and public health benefits associated with the more efficient use of energy are important to take into account when considering the need for national energy conservation. The proposed standards are likely to result in environmental benefits in the form of reduced emissions of air pollutants and greenhouse gases (“GHGs”) associated with energy production and use. DOE conducts an emissions analysis to estimate how potential standards may affect these emissions, as discussed in section IV.K; the estimated emissions impacts are reported in section V.B.6 of this document. DOE also estimates the economic value of emissions reductions resulting from the considered TSLs, as discussed in section IV.L of this document.

### g. Other Factors

In determining whether an energy conservation standard is economically justified, DOE may consider any other factors that the Secretary deems to be relevant. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(B)(i)(VII)) To the extent DOE identifies any relevant information regarding economic justification that does not fit into the other categories described previously, DOE could consider such information under “other factors.”

### 2. Rebuttable Presumption

As set forth in 42 U.S.C. 6295(o)(2)(B)(iii), EPCA creates a rebuttable presumption that an energy conservation standard is economically justified if the additional cost to the consumer of a product that meets the standard is less than three times the value of the first year’s energy savings resulting from the standard, as calculated under the applicable DOE test procedure. DOE’s LCC and PBP analyses generate values used to calculate the effects that proposed energy conservation standards would have on the payback period for consumers. These analyses include, but are not limited to, the 3-year payback

period contemplated under the rebuttable-presumption test. In addition, DOE routinely conducts an economic analysis that considers the full range of impacts to consumers, manufacturers, the Nation, and the environment, as required under 42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(B)(i). The results of this analysis serve as the basis for DOE’s evaluation of the economic justification for a potential standard level (thereby supporting or rebutting the results of any preliminary determination of economic justification). The rebuttable presumption payback calculation is discussed in section IV.F.11 of this proposed rule.

## IV. Methodology and Discussion of Related Comments

This section addresses the analyses DOE has performed for this rulemaking with regard to distribution transformers. Separate subsections address each component of DOE’s analyses.

DOE used several analytical tools to estimate the impact of the standards proposed in this document. The first tool is a model that calculates the LCC savings and PBP of potential amended or new energy conservation standards. The national impacts analysis uses a second model set that provides shipments projections and calculates national energy savings and net present value of total consumer costs and savings expected to result from potential energy conservation standards. DOE uses the third spreadsheet tool, the Government Regulatory Impact Model (“GRIM”), to assess manufacturer impacts of potential standards. These tools are available in the docket for this rulemaking: [www.regulations.gov/docket/EERE-2019-T-STD-0018](http://www.regulations.gov/docket/EERE-2019-T-STD-0018). Additionally, DOE used output from the latest version of the Energy Information Administration’s (“EIA’s”) *Annual Energy Outlook* (“AEO”), a widely known energy projection for the United States, for the emissions and utility impact analyses.

### A. Market and Technology Assessment

DOE develops information in the market and technology assessment that provides an overall picture of the market for the products concerned, including the purpose of the products, the industry structure, manufacturers, market characteristics, and technologies used in the products. This activity includes both quantitative and qualitative assessments, based primarily on publicly available information. The subjects addressed in the market and technology assessment for this rulemaking include (1) a determination of the scope of the rulemaking and

product classes, (2) manufacturers and industry structure, (3) existing efficiency programs, (4) shipments information, (5) market and industry trends; and (6) technologies or design options that could improve the energy efficiency of distribution transformers. The key findings of DOE's market assessment are summarized in the following sections. See chapter 3 of the NOPR TSD for further discussion of the market and technology assessment.

### 1. Scope of Coverage

The current definition for a distribution transformer codified in 10 CFR 431.192 is the following:

Distribution transformer means a transformer that—(1) Has an input voltage of 34.5 kV or less; (2) Has an output voltage of 600 V or less; (3) Is rated for operation at a 60 Hz; and (4) Has a capacity of 10 kVA to 2500 kVA for liquid-immersed units and 15 kVA to 2500 kVA for dry-type units; but (5) The term “distribution transformer” does not include a transformer that is an—(i) Autotransformer; (ii) Drive (isolation) transformer; (iii) Grounding transformer; (iv) Machine-tool (control) transformer; (v) Nonventilated transformer; (vi) Rectifier transformer; (vii) Regulating transformer; (viii) Sealed transformer; (ix) Special-impedance transformer; (x) Testing transformer; (xi) Transformer with tap range of 20 percent or more; (xii) Uninterruptible power supply transformer; or (xiii) Welding transformer.

DOE received several comments regarding the definition of “distribution transformer” and the definitions of equipment excluded from the definition. These detailed comments are discussed below.

#### a. Autotransformers

The EPCA definition of distribution transformer excludes “a transformer that is designed to be used in a special purpose application and is unlikely to be used in general purpose applications, such as . . . [an] auto-transformer . . .” (42 U.S.C. 6291(35)(b)(ii)) In response to comments received as part of the June 2019 Early Assessment Review RFI that suggested DOE include “low-voltage autotransformers” within the scope of distribution transformers, DOE noted that autotransformers do not provide galvanic isolation<sup>34</sup> and thus would be unlikely to be used in at least some general-purpose applications. (August 2021 Preliminary Analysis TSD at p. 2–

5) In the August 2021 Preliminary Analysis TSD, DOE requested comment regarding the potential use of autotransformers as substitutes for general-purpose distribution transformers. *Id.*

Schneider commented that while voltage conversion can be done with an autotransformer, autotransformers cannot derive a neutral, lower source impedance, or phase shift to remove triplen (*i.e.*, multiples-of-three) harmonics, meaning an autotransformer risks sacrificing power quality if used in place of a general-purpose distribution transformer. (Schneider, No. 59 at p. 2) Schneider added that because of these power quality concerns, autotransformers would be unlikely to be used in commercial buildings but could be used in some subsegments and smaller commercial jobs—a possibility supported by manufacturers' adding autotransformers to standard product catalogs. (Schneider, No. 49 at p. 2) Schneider commented that it recommends autotransformers in subsegments that require wye-wye connections<sup>35</sup> and that segment is growing and will continue to grow if autotransformers remain exempt. (Schneider, No. 49 at p. 2) Schneider commented that there are no technical limitations for autotransformer to meet standards and asserted that the exclusion was related to how efficiency was calculated and tested. Schneider recommended subjecting them to the current efficiency standards based on their nameplate kVA. (Schneider, No. 49 at pp. 2–3) Schneider commented that in typical applications (*i.e.*, 480Y/277 and 208Y/120) autotransformers would be 60 percent the size and 20–25 percent less expensive. In non-typical applications, units would be 20 percent the size and 50 percent less expensive. (Schneider, No. 49 at p. 3)

NEMA commented that it is not aware of autotransformers being used in place of distribution transformers. (NEMA, No. 50 at p. 3)

Stakeholder comments suggest that there may be certain applications in which an autotransformer may be substitutable for an isolation transformer. However, the comments also suggest such substitution is limited to specific applications (*e.g.*, wye-wye connections) and not common enough to be regarded as general practice. Further, DOE did not receive any feedback counter to its statement in the August 2021 Preliminary Analysis TSD

that autotransformers do not provide galvanic isolation and thus would be unlikely to be used in at least some general-purpose applications. Based on this feedback, DOE is not proposing to amend the exclusion of autotransformers under the distribution transformer definition. DOE will monitor the market and may reevaluate this exclusion if evidence exists to support growing use of autotransformers based on lower purchase price than would be warranted by technical considerations alone.

#### b. Drive (Isolation) Transformers

In the August 2021 Preliminary Analysis TSD, DOE noted that the EPCA definition of distribution transformers excludes a transformer that is designed to be used in a special purpose application and is unlikely to be used in general purpose applications, such as a drive transformer. (42 U.S.C. 6291(35)(b)(ii)) DOE stated that it did not have any data indicating that “drive isolation transformers” were being widely used in generally purpose applications and as such, considered them statutorily excluded. DOE requested comment and data as to the extent to which “drive isolation transformers” are used in generally purpose applications. (August 2021 Preliminary Analysis TSD at p. 2–6)

Schneider and Eaton commented that drive isolation transformers have historically been sold with nonstandard low-voltage ratings, corresponding to typical motor input voltages, and as such are unlikely to be used in general-purpose applications. (Schneider, No. 49 at p. 3; Eaton, No. 55 at p. 3) NEMA commented that drive isolation transformers are not sold in great quantities and not widely used in general purpose applications. (NEMA, No. 50 at p. 3)

Schneider and Eaton commented that recently there has been some increase in drive isolation transformers specified as having either a “480Y/277” or “208Y/120” voltage secondary, making it more difficult to ascertain whether these transformers are being used in general distribution applications. (Schneider No. 49 at p. 3; Eaton, No. 55 at p. 3) Schneider commented that only 6-pulse drive isolation transformers<sup>36</sup> can serve

<sup>36</sup> Drive-isolation transformers employ rectifier diodes to mitigate drive harmonics by phase shifting secondary voltages. The rectifier diode results in two pulses per phase. In a standard three-phase, drive-isolation transformer, application of a rectifier would result in 6-pulses, two per 120° phase shift. If additional harmonic mitigation is needed, additional secondary windings are added with differing connections phase shifted from one

<sup>34</sup> *i.e.*, autotransformers contain a continuous, current-carrying electrical pathway that “isolation” transformers do not, which is perceived as a safety compromise in some applications.

<sup>35</sup> Wye connection refers to four distribution transformer terminals, three of which are connected to one power phase and the fourth connected to all three power phases.

general purpose applications. (Schneider, No. 49 at p. 4) Eaton added that there is a minor concern that consumers will increasingly discover that drive isolation transformers can be used in certain general-purpose applications, putting manufacturers in the position of suspecting but not being able to ascertain circumvention without being sure of end use. (Eaton, No. 55 at p. 3) Eaton commented that a DOE compliant general-purpose transformer would be 16 percent more expensive than a drive isolation transformer that could be used in its place, while the losses for the drive isolation transformer at 50 percent PUL were 55 percent greater. (Eaton, No. 55 at p. 3)

Eaton commented that pulse count is somewhat hard to define as it is generally more a function of the rectifier that the drive isolation transformer is connected to than the transformer itself. (Eaton, No. 55 at p. 4) Eaton added that 12-pulse and 24-pulse drive isolation transformers could, technically, be used in general purpose applications but that it would be less likely due to higher cost. (Eaton, No. 55 at p. 3–4)

Schneider commented that 6-pulse drive isolation transformers should be included in the LVDT scope, as is required in Canada. (Schneider, No. 49 at p. 4)

Commenters indicated that while some drive isolation transformers could, in theory be used in general purpose applications, no evidence exists suggesting this practice is common. As such, DOE has concluded that drive isolation transformers remain an example of a transformer that is designed to be used in special purpose applications and is unlikely to be used in general purpose applications. Given that drive isolation transformers are excluded by statute, including drive isolation transformers would first require a finding that they are being used in general purpose applications, which does not appear to be the case at this time.

Schneider commented that drive isolation transformers should only be permitted at standard motor voltages and not standard distribution voltages. (Schneider, No. 49 at p. 3)

DOE tentatively finds, as supported by comments from Schneider and Eaton, that certain distribution transformers that meet the current criteria of a “drive isolation transformers” are likely to be used in general-purpose applications based on their voltage rating. The overwhelming majority of equipment in the US is designed to operate using

either 208Y/120 or 480Y/277 voltage, and therefore the overwhelming majority of general-purpose distribution transformers have a secondary voltage rating that is one of these standard voltage ratings. Drive-isolation transformers, by contrast, are not designed to power the majority of equipment. Rather, they are designed to work with a specific motor drive to output a special purpose voltage, unique to the application. As such, drive-isolation transformers with a rated secondary voltage of 208Y/120 or 480Y/277 is considerably more likely to be used in general purpose applications rather than special purpose applications.

EPCA excludes from the definition of distribution transformer certain transformers designed to be used in an application other than a general-purpose application. Specifically, “distribution transformer” excludes a transformer that is “designed to be used in a special purpose application and is unlikely to be used in general purpose applications, such as a drive transformer, rectifier transformer, auto-transformer, Uninterruptible Power System transformer, impedance transformer, regulating transformer, sealed and nonventilating transformer, machine tool transformer, welding transformer, grounding transformer, or testing transformer[.]” (42 U.S.C. 6291(35)(b)(ii))

Drive (isolation) transformers are defined as “a transformer that: (1) Isolates an electric motor from the line; (2) Accommodates the added loads of drive-created harmonics; and (3) Is designed to withstand the additional mechanical stresses resulting from an alternating current adjustable frequency motor drive or a direct current motor drive.” 10 CFR 431.192. In the product catalogs reviewed by DOE, drive-isolation transformers are frequently listed at common motor voltages such as “460Y/266” and “230Y/133.” The listing at common motor voltages indicates that these drive-isolation transformers are designed for use in special purpose applications (*i.e.*, isolating an electric motor from the line) and are unlikely to be used in general purpose distribution applications, on account of not aligning with general distribution voltages.

DOE has previously stated that it intends to strictly and narrowly construe the exclusions from the definition of “distribution transformer.” 84 FR 24972, 24979 (April 27, 2009). To the extent that some transformers are marketed as drive-isolation transformers but with rated output voltages aligning with common distribution voltages,

DOE is unable to similarly conclude that these transformers are used in special purpose applications. Comments by Eaton and Schneider confirm that while these transformers are not sold in great numbers, they are significantly more likely to be used in general purpose distribution applications. As such, DOE has tentatively determined that such distribution transformers are not drive (isolation) transformers as that term applies to the exclusions from the definition of “distribution transformer.”

In order to limit the definition of drive isolation transformers to distribution transformers designed for use in special purpose applications and not likely to be used in general purpose applications, DOE proposes to amend the definition to include the criterion that drive isolation transformers have an output voltage other than 208Y/120 or 480Y/277. DOE may consider additional voltage limitations in the definition of “drive isolation transformer” should DOE determine such voltages indicate a design for use in general purpose applications.

DOE requests comment on the proposed amendment to the definition of drive (isolation) transformer. DOE requests comment on its tentative determination that voltage ratings of 208Y/120 and 480Y/277 indicate a design for use in general purpose applications. DOE also requests comment on other voltage ratings or other characteristics that would indicate a design for use in general purpose applications.

### *c. Special-Impedance Transformers*

Impedance is an electrical property that relates voltage across and current through a distribution transformer. It may be selected to balance voltage drop, overvoltage tolerance, and compatibility with other elements of the local electrical distribution system. A transformer built to operate outside of the normal impedance range for that transformer’s kVA rating, as specified in Tables 1 and 2 of 10 CFR 431.192 under the definition of “special-impedance transformer,” is excluded from the definition of “distribution transformer.” 10 CFR 431.192.

In the August 2021 Preliminary Analysis TSD, DOE requested feedback as to the number of nonstandard kVA transformers sold and how manufacturers are currently interpreting the normal impedance range for nonstandard kVA values. (August 2021 Preliminary Analysis TSD at p. 2–8)

NEMA and Eaton recommended that the impedance values in Tables 1 and 2 of 10 CFR 431.192 under the definition of “special-impedance transformer” be

another. Manufacturers’ sell drive-isolation transformers as 6-pulse, 12-pulse, or 24-pulse.

listed as a kVA range, to remove what they stated is an ambiguity as to the normal impedance of non-standard transformer capacities (*i.e.*, capacities not explicitly included in the tables). (Eaton, No. 55 at p. 4; NEMA, No. 50 at p. 3–4) Eaton commented that there were very few nonstandard kVA ratings for single-phase transformers and just under one percent of three-phase transformers are rated for non-standard kVAs. (Eaton, No. 55 at p. 4) Eaton added that nonstandard kVAs are quite common in the currently exempted step-up transformers, making up 27 percent of three-phase step-up transformers. (Eaton, No. 55 at p. 4) Eaton stated that it currently uses the impedance values of the adjacent standard kVA ratings that result in the largest normal impedance range and, equivalently, the narrowest excluded impedance range. (Eaton, No. 55 at p. 5)

NEMA commented that many, but not all, customers specify the middle of the normal impedance range. NEMA stated that some customers specify a particular impedance to compliment an application, such as for protection equipment or to match better with sensitive loads. (NEMA, No. 50 at p. 4)

Schneider commented that it receives few requests for distribution transformers outside the normal impedance range and few requests for distribution transformers with nonstandard kVAs and therefore applied energy efficiency regulations to special impedance transformers without pursuing exemptions. (Schneider, No. 49 at p. 4) Schneider added that the special impedance exemption could potentially be removed, and thus reduce potential abuse or the normal range could be expanded for all distribution transformers, regardless of kVA to be from 0.5 percent to 15 percent. (Schneider, No. 49 at p. 4) As another alternative, Schneider recommended either setting the mid-range impedance as a threshold or using a linear interpolation of the impedance values immediately above and below that kVA rating, similar to how efficiency standards are applied for non-standard kVA ratings. (Schneider, No. 49 at p. 4–5)

As DOE noted in the August 2021 Preliminary Analysis TSD, its current values for normal impedance are based on NEMA TP 2–2005. (August 2021 Preliminary Analysis TSD at p. 2–8) The current tables in the “special-impedance transformer” definition do not explicitly address how to treat nonstandard kVA values.

DOE is proposing to amend the definition of “special-impedance transformer” to specify that

“distribution transformers with kVA ratings not appearing in the tables shall have their minimum normal impedance and maximum normal impedance determined by linear interpolation of the kVA and minimum and maximum impedances, respectively, of the values immediately above and below that kVA rating.”. This proposed approach is consistent with the recommendation from Schneider. Moreover, this approach is consistent with the approach specified for determining the required efficiency requirements of distribution transformers of nonstandard kVA rating (*i.e.*, using a linear interpolation from the nearest bounding kVA values listed in the table). *See* 10 CFR 431.196.

DOE requests comment on its proposed amendment to the definition of “special-impedance transformer” and whether it provides sufficient clarity as to how to treat the normal impedance ranges for non-standard kVA distribution transformers.

Carte commented that one of its customers requires higher impedance pole transformers, within the “normal” range, but in general the larger coils and higher core losses associated with a higher impedance can be disadvantaged in meeting efficiency standards. (Carte, No. 54 at p. 1)

DOE relies on the current definition of “special-impedance transformer” in its engineering analysis. DOE does not further consider impedance aside from ensuring selectable models in the analysis are within the “normal impedance” range as currently defined. DOE’s analyzed higher efficiency levels, including those using amorphous steel, span a range of impedance values and therefore DOE has not considered further separating distribution transformers based on impedance.

#### d. Tap Range of 20 Percent or More

Transformers with multiple voltage taps, the highest of which equals at least 20 percent more than the lowest, computed based on the sum of the deviations of the voltages of these taps from the transformer’s nominal voltage, are excluded from the definition of distribution transformers. 10 CFR 431.192. (*See also*, 42 U.S.C. 6291(35)(B)(i)) In the August 2021 Preliminary Analysis TSD, DOE requested comment as to whether only full-power taps should count toward the exclusion and how the choice of nominal voltage would impact the exclusion. (August 2021 Preliminary Analysis TSD at p. 2–9)

In response, Schneider, NEMA and Eaton commented that only full-power taps should be permitted for tap range

calculations. (Eaton, No. 55 at pp. 5–6; Schneider, No. 49 at pp. 5–6; NEMA, No. 50 at p. 4)

Eaton commented that nominal voltage is selected by the consumer but selecting one such that it excludes a product can result in 17 percent lower costs and 73 percent higher losses at 50 percent PUL. (Eaton, No. 55 at p. 6) Schneider provided an example of how the nominal voltage can impact whether a product is subject to standards. (Schneider, No. 49 at p. 6) Eaton commented that of the three-phase units it has built, only one unit was built as having a tap range of 20 percent or more while 112 units were built as DOE compliant but could be moved out of scope based on the choice of nominal voltage. (Eaton, No. 55 at pp. 6–7) Schneider added that another complication to using nominal voltage is a new type of distribution transformer that has multiple-nominal voltages. (Schneider, No. 49 at p. 6–8)

Eaton supported changing how the tap range is calculated to remove potential incentives to circumvent standards. (Eaton, No. 55 at p. 6) NEMA commented that it did not reach consensus as to how to calculate tap range. (NEMA, No. 50 at p. 4) Schneider recommended DOE establish all common system voltages as nominal and have manufacturers justify tap ranges according to the relative function of each to the associated nominal in the case of multiple nominals. (Schneider, No. 49 at p. 8) Schneider added that if it is too difficult to establish what nominal should be, the 20 percent tap range exclusion could be removed. (Schneider, No. 49 at p. 8)

While the traditional industry understanding of tap range is in percentages relative to the nominal voltage, stakeholder comments suggest that such a calculation can be applied differently by different manufacturers such that two physically identical distribution transformers can be inside or outside of scope depending on the choice of nominal voltage. To have a consistent standard for physically identical distribution transformers, DOE proposes to modify the calculation of tap range to only include full-power capacity taps and calculate tap range based on the transformer’s maximum voltage rather than nominal voltage. The amended definition would classify transformers with tap ranges of 20 percent or more as “a transformer with multiple full-power voltage taps, the highest of which equals at least 20 percent more than the lowest, computed based on the sum of the deviations of these taps from the transformer’s maximum full-power voltage.”. Such a

modification would ensure that all distribution transformers capable of operating across a similar voltage range, regardless of what voltage is considered nominal, are treated equally. Further, the proposed modification removes ambiguity as to what customers are using as a nominal voltage and removes incentives to change the nominal voltage to move equipment into or out of scope of the standards.

DOE requests comment on its proposed definition for transformers with a tap range of 20 percent or more.

#### e. Sealed and Nonventilated Transformers

As discussed, the statutory definition of distribution transformer excludes transformers that are designed to be used in a special purpose application and are unlikely to be used in general purpose applications, such as a “sealed and nonventilating transformers.” (42 U.S.C. 6291(35)(b)(ii)) In the August 2021 Preliminary Analysis TSD, DOE noted that the definition of sealed and nonventilating transformers is applicable only to dry-type transformers. While liquid-immersed transformers are technically also sealed, DOE has explicitly included them in the definition of a distribution transformer. 10 CFR 431.92. (August 2021 Preliminary Analysis TSD at p. 2–7)

In response, NEMA recommended DOE add the words “dry-type” to the definition of sealed and nonventilated transformers. (NEMA, No. 50 at p. 3)

DOE agrees that the proposed clarification would help clarify the scope of the sealed and nonventilated transformer exclusion and has proposed to amend the definition as such.

DOE requests comment on its proposed amendments to the definitions of sealed and nonventilated transformers.

#### f. Step-Up Transformers

For transformers generally, the term “step-up” refers to the function of a transformer providing greater output voltage than input voltage. Step-up transformers primarily service energy producing applications, such as solar or wind electricity generation, and input source voltage, step-up the voltage in the transformer, and output higher voltages that feed into the electric grid. The definition of “distribution transformer” does not explicitly exclude transformers designed for step-up operation.

However, most step-up transformers have an output voltage larger than the 600 V limit specified in the distribution transformer definition. See 10 CFR

431.192. (See also 42 U.S.C. 6291(35)(A)(ii))

DOE has acknowledged it is technically possible to operate a step-up transformer in a reverse manner, by connecting the high-voltage to the “output” winding of a step-up transformer and the low-voltage to the “input” winding of a step-up transformer, such that it functions as a distribution transformer. 78 FR 2336, 23354. However, DOE previously had not identified this as a widespread practice. *Id.* In the August 2021 Preliminary Analysis TSD, DOE requested feedback as to what the typical efficiency is of step-up transformers, what fraction are being used in traditional distribution transformer applications, and what are the typical input and output voltages of step-up transformers. (August 2021 Preliminary Analysis TSD at p. 2–18)

NEMA commented that efficiency of step-up transformers is dictated by customers and is sometimes above and sometimes below DOE efficiency levels for distribution transformers. NEMA added that they are not aware of step-up transformers being used in distribution applications and they are concerned that subjecting step-up transformers to regulation may negatively constrain design flexibility. (NEMA, No. 50 at p. 5)

Eaton commented that step-up transformers are almost exclusively used in renewable energy applications where low-voltages (typically less than 700 volts) are stepped up to medium-voltage distribution applications (typically up to 34.5 kV). Eaton added that virtually all step-up transformers are three-phase and there are maybe a dozen single-phase step-up transformers per year which may or may not be possible circumvention scenarios. (Eaton, No. 55 at p. 9) Eaton commented that some step-up transformer customers specify total owning cost, maximum losses, or efficiency and provided a table of average efficiency of three-phase liquid-immersed step-up transformers which showed the average efficiency of step-up transformers tended to be below DOE efficiency standards. (Eaton, No. 55 at p. 9) Eaton noted that many solar photovoltaic inverter manufacturers have been using higher input voltages that often require non-standard voltages or winding configurations and may decrease likelihood of a step-up transformer being used in a distribution application. (Eaton, No. 55 at p. 9) Eaton stated that 31 percent of their three-phase step-up transformers had common distribution low-voltages, that could more easily be used in distribution applications, but

Eaton had no knowledge that step-up transformers were being used in traditional distribution applications. (Eaton, No. 55 at p. 9) Eaton stated that step-up voltages with common distribution high and low-voltages could possibly be operated in reverse in distribution transformer applications. (Eaton, No. 55 at p. 9)

The comments received support DOE’s prior statements. While step-up transformers could, in theory, be used in distribution applications, DOE does not have any data to indicate that this is a common or widespread practice. Eaton’s comments underscore that step-up transformers serve a separate and unique application, often in the renewable energy field where transformers designs may not be optimized for the distribution market but rather are optimized for integration with other equipment, such as inverters. Therefore, DOE is not proposing to amend the definition of “distribution transformer” to account for step-up transformers. DOE may reevaluate this conclusion in a future action if evidence arises to suggest step-up transformers are being used in distribution functions.

#### g. Uninterruptible Power Supply Transformers

“Uninterruptible power supply transformer” is defined as a transformer that is used within an uninterruptible power system, which in turn supplies power to loads that are sensitive to power failure, power sags, over voltage, switching transients, line noise, and other power quality factors. 10 CFR 431.192. An uninterruptable power supply transformer is excluded from the definition of distribution transformer. 42 U.S.C. 6291(35)(B)(ii); 10 CFR 431.192. Such a system does not step-down voltage, but rather it is a component of a power conditioning device and it is used as part of the electric supply system for sensitive equipment that cannot tolerate system interruptions or distortions, and counteracts such irregularities. 69 FR 45376, 45383. DOE has clarified that uninterruptable power supply transformers do not “supply power to” an uninterruptible power system, rather they are “used within” the uninterruptible power system. 72 FR 58190, 58204. This is consistent with the reference in the definition to transformers that are “within” the uninterruptible power system. 10 CFR 431.192. Distribution transformers at the input, output or bypass that are supplying power to the uninterruptible power system are not uninterruptable power supply transformers.

In the August 2021 Preliminary Analysis TSD, DOE requested comment regarding how manufacturers are applying the definition of uninterruptible power supply transformer and whether amendments are needed. (August 2021 Preliminary Analysis TSD at p. 2–10)

In response, NEMA commented that manufacturers are applying the definition appropriately and clarification is not needed. (NEMA, No. 50 at p. 4) Schneider recommended DOE explicitly state that transformers at the input, output, or by-pass of an uninterruptible power system are not part of the uninterruptible power system and as such are not excluded. (Schneider, No. 49 at p. 8).

DOE agrees that explicitly stating that transformers at the input, output, or bypass of a distribution transformer are not a part of the uninterruptible power system would further clarify the definition. As such, DOE is proposing to amend the definition to make these clarifications.

DOE requests comment on its proposed amendment to the definition of uninterruptible power supply transformers.

Carte asked if network transformers are considered uninterruptible power supply transformers as the network grid cannot go down. (Carte, No. 54 at p. 2) DOE notes that the need for a reliable operation does not make a distribution transformer an uninterruptible power supply transformer. As stated, uninterruptible power supply transformers are used within uninterruptible power systems as a power conditioning device, not as a distribution transformer.

#### h. Voltage Specification

As stated, the definition of “distribution transformer” is based, in part, on the voltage capacity of equipment, *i.e.*, has an input voltage of 34.5 kV or less; and has an output voltage of 600 V or less. 10 CFR 431.192. (42 U.S.C. 6291(35)(A)) Three-phase distribution transformer voltage may be described as either “line”, *i.e.*, measured across two lines, or “phase”, *i.e.*, measured across one line and the neutral conductor. For delta-connected<sup>37</sup> distribution transformers, line and phase voltages are equal. For wye-connected distribution transformers, line voltage is equal to phase voltage multiplied by the square root of three.

<sup>37</sup> Delta connection refers to three distribution transformer terminals, each one connected to two power phases.

DOE notes that it has previously stated that the definition of distribution transformer applies to transformers having an output voltage of 600 volts or less, not having only an output voltage of less than 600 volts. 78 FR 23336, 23353. For example, a three-phase transformer for which the wye connection is at or below 600 volts, but the delta connection is above 600 volts would satisfy the output criteria of the distribution transformer definition. DOE’s test procedure requires that the measured efficiency for the purpose of determining compliance be based on testing in the configuration that produces the greatest losses, regardless of whether that configuration alone would have placed the transformer at-large within the scope of coverage. *Id.* Similarly with input voltages, a transformer is subject to standards if either the “line” or “phase” voltages fall within the voltage limits in the definition of distribution transformers, so long as the other requirements of the definition are also met. *Id.*

Eaton commented that DOE flipped the usage of wye and delta in its example where one voltage complies and the other does not because wye voltage should be less than delta voltage. (Eaton, No. 55 at p. 8) DOE has updated its language above to correct this.

Schneider commented that the industry interpretation of input and output voltage is likely line voltage but using phase encompasses a larger scope and DOE should clarify in the regulatory text. (Schneider, No. 49 at p. 8) NEMA commented that DOE should clarify the interpretation of voltage in the regulatory text. (NEMA, No. 50 at p. 4) Eaton commented that using phase voltage would deviate from industry convention, but if DOE is choosing to interpret language this way, it should explicitly say so in the regulatory text. (Eaton, No. 55 at pp. 7–8)

DOE notes that the voltage limits in the definition of distribution transformer established in EPCA do not specify whether line or phase voltage is to be used. 42 U.S.C. 6291(35). DOE has previously stated that a distribution transformer is required to comply if either line or phase voltage is within the scope of the distribution transformer definition. 78 FR 23336, 23353. Upon further evaluation, DOE notes that the distribution transformer input voltage limitation aligns with the common maximum distribution circuit voltage of 34.5 kV.<sup>38,39</sup> This common distribution

<sup>38</sup> Pacific Northwest National Lab and U.S. Department of Energy (2016), “Electricity Distribution System Baseline Report.”, p. 27.

voltage aligns with the distribution line voltage and implies that the intended definition of distribution transformer in EPCA was to specify the input and output voltages based on the line voltage. DOE has tentatively determined that applying the phase voltage, as DOE cited in the April 2013 Standards Final Rule, would cover products not traditionally understood to be distribution transformers and not intended to be within the scope of distribution transformer as defined by EPCA. For example, a transformer with a line voltage of 46 kV, which is commonly considered in industry to be a subtransmission voltage (*i.e.*, higher than a distribution voltage), would have a phase voltage less than 34.5 kV if sold in a wye-connection. Despite this transformer not being considered a distribution transformer by industry, interpreting DOE’s definition as either a line or phase voltage would mean that a 46 kV wye-connection is considered a distribution transformer. As noted by stakeholders, such an interpretation would be out of step with common industry practice and out of step with the intended coverage of EPCA.

DOE notes that the common distribution transformer voltages have both line and phase voltages that are within DOE’s scope, and therefore the proposed change is not expected to impact the scope of this rulemaking aside from select, unique transformers with uncommon voltages. In this NOPR, DOE is proposing to modify the definition of distribution transformer to state explicitly that the input and output voltage limits are based on the “line” voltage and not the phase voltage. This amendment, while a slight reinterpretation relative to the April 2013 Standards Final Rule, better aligns with industry practice, minimizes confusion, and does not impact any of the commonly built distribution transformer designs.

DOE requests comment as to whether its proposed definition better aligns with industries understanding on input and output voltages.

Further, DOE requests comment and data on whether the proposed amendment would impact products that are serving distribution applications, and if so, the number of distribution transformers impacted by the proposed amendment.

Available at [www.energy.gov/sites/prod/files/2017/01/f34/Electricity%20Distribution%20System%20Baseline%20Report.pdf](http://www.energy.gov/sites/prod/files/2017/01/f34/Electricity%20Distribution%20System%20Baseline%20Report.pdf).

<sup>39</sup> U.S. Department of Energy (2015), “United States Electricity Industry Primer.” Available at [www.energy.gov/sites/prod/files/2015/12/f28/united-states-electricity-industry-primer.pdf](http://www.energy.gov/sites/prod/files/2015/12/f28/united-states-electricity-industry-primer.pdf).

## i. kVA Range

The EPCA definition for distribution transformers does not include any capacity range. In codifying the current distribution transformer capacity ranges in 10 CFR 431.192, DOE noted that distribution transformers outside of these ranges are not typically used for electricity distribution. 71 FR 24972, 24975–24976. Further, DOE noted that transformer capacity is to some extent tied to its primary and secondary voltages, meaning that the EPCA definition has the practical effect of limiting the maximum capacity of transformers that meet those voltage limitations to approximately 3,750 to 5,000 kVA, or possibly slightly higher. *Id.* However, DOE further stated the inclusion of capacity limitations in the definition of “distribution transformers” in 10 CFR 431.192 does not mean that DOE has concluded that the EPCA definition of “distribution transformer” includes such limitations and stated that DOE intends to evaluate larger and smaller capacities than those included in the definition. *Id.*

DOE’s current definition of distribution transformer specifies a capacity of 10 kVA to 2,500 kVA for liquid-immersed units and 15 kVA to 2,500 kVA for dry-type units. 10 CFR 431.192. The kVA ranges are consistent with NEMA publications in place at the time DOE adopted the range, specifically NEMA TP–1 standard. 78 FR 23336, 23352. DOE cited these documents as evidence that its kVA scope is consistent with industry understanding (*i.e.*, NEMA TP–1 and NEMA TP–2), but noted that it may revise its understanding in the future as the market evolves. 78 FR 23336, 23352. Subsequent to the April 2013 Standards Final Rule, establishing the current energy conservation standards, NEMA TP–1 standard was rescinded.

As noted above, the voltage limitations included in EPCA practically limit the size of distribution transformers. However, several industry sources suggest that those limitations may be greater than the current 2,500 kVA limit included in DOE’s definition in 10 CFR 431.192. For example, Natural Resources Canada (“NRCAN”) regulations include three-phase dry-type distribution transformers with a nominal power of 15 to 7,500 kVA.<sup>40</sup> The European Union (“EU”) Ecodesign requirements specify maximum load losses and maximum no-load losses for

three-phase liquid-immersed distribution transformers up to 3,150 kVA.<sup>41</sup> IEEE C57.12.90 and C57.12.91 cite similar short circuit tests for three-phase distribution transformers up to 5,000 kVA.

In the August 2021 Preliminary Analysis TSD, DOE requested comment regarding the quantity and efficiency of distribution transformers outside of the kVA range of the definition of distribution transformer but with input and output voltages that meet the voltage criteria in said definition. (August 2021 Preliminary Analysis TSD at p. 2–11)

Regarding dry-type distribution transformers, Schneider commented that units below 15 kVA are typically sealed or non-ventilated and as such would be excluded from the definition of distribution transformers. (Schneider, No. 49 at p. 9) Eaton commented that single-phase liquid immersed distribution transformers less than 10 kVA were less than 1 percent of shipments. (Eaton, No. 55 at p. 8)

DOE has not received any data or information suggesting that expanding the scope of the standards below 10 kVA for liquid-immersed distribution transformers or below 15 kVA for dry-type distribution transformers would lead to significant energy savings. As such, DOE is not proposing any changes to the lower capacity limit in the distribution transformer definition.

Regarding sales of distribution transformers beyond the 2,500 kVA scope, NEMA commented that while there are sales of models over 2,500 kVA, they are not sold in significant numbers as compared to in-scope products and energy savings would be limited. (NEMA, No. 50 at p. 5) Eaton commented that 19.6 percent of their three-phase liquid-immersed transformers have input and output voltage in-scope, but kVAs above 2500 kVA. (Eaton, No. 55 at p. 8) Eaton provided average efficiencies for these larger kVA distribution transformers. (Eaton, No. 55 at p. 8) In interviews, manufacturers commented that many of the larger distribution transformers are serving renewable applications as step-up transformers and would therefore be outside the scope of the standards regardless of the upper capacity of the definition of distribution transformer.

However, while many larger transformers may be step-up transformers, stakeholder comments suggest that there are also general

purpose distribution transformers sold above 2,500 kVA with primary and secondary voltages that would still be within the criteria of the definition of distribution transformer. While NEMA suggested sales of models above 2,500 kVA are small, Eaton’s comments suggest that at least for some manufacturers or markets they could be notable. Further, some manufacturers in interviews expressed concern that in the presence of amended energy conservation standards, there may be increased incentive to build distribution transformers that are just above the existing scope (*e.g.*, 2,501 kVA).

As such, it is appropriate for DOE to consider all distribution transformers that are serving general purpose distribution applications, even if the capacity of those distribution transformers is larger than the common unit. DOE is considering multiple possible upper limits for distribution transformer capacity. IEEE C57.12.00–2015 lists the next three preferred continuous kVA ratings above 2,500 kVA as 3,750 kVA, 5,000 kVA, and 7,500 kVA. Eaton’s comments suggest that the upper end of their distribution capacity is 3,750 kVA. In a prior rulemaking, stakeholders commented that their product lines include medium voltage dry-type models up to around 5,000 kVA.<sup>42</sup> Further, NRCAN regulations cover dry-type distribution transformers up to 7,500 kVA but exclude distribution transformers with low-voltage line currents of 4,000 amps or more.

Taken together, these points suggest there are some sales of general purpose distribution transformers above 2,500 kVA, such as at 3,750 kVA and 5,000kVA. DOE does not have any data or evidence that general purpose distribution transformers are being sold above 5,000 kVA and does have prior public comment of 5,000 kVA transformers with distribution voltages being sold. Therefore, DOE is proposing to expand the scope of the definition of “distribution transformer” in 10 CFR 431.192 for both liquid-immersed distribution transformers and dry-type distribution transformers to include distribution transformers up to 5,000 kVA. DOE is also considering other upper limits on the scope of distribution transformer, including 3,750 kVA and 7,500 kVA.

DOE requests comment and data as to whether 5,000 kVA represents the upper end of what is considered distribution

<sup>40</sup> See NRCAN dry-type transformer energy efficiency regulations at [www.nrcan.gc.ca/energy-efficiency/energy-efficiency-regulations/guide-canadas-energy-efficiency-regulations/dry-type-transformers/6875](http://www.nrcan.gc.ca/energy-efficiency/energy-efficiency-regulations/guide-canadas-energy-efficiency-regulations/dry-type-transformers/6875).

<sup>41</sup> Official Journal of the European Union, *Commission Regulation (EU) No. 548/2014*, May 21, 2014. Available online at: [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJL\\_2014.152.01.0001.01.ENG](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJL_2014.152.01.0001.01.ENG).

<sup>42</sup> See Federal Pacific comment on Docket No. EERE–2006–STD–0099–0105. Available at [www.regulations.gov/comment/EERE-2006-STD-0099-0105](http://www.regulations.gov/comment/EERE-2006-STD-0099-0105).

transformers or if another value should be used.

DOE has also estimated potential energy savings associated with expanding coverage of distribution transformers between 2,500 and 5,000 kVA within scope. DOE relied on public comments and confidential data sources to estimate shipments between 2,500 kVA and 5,000 kVA. Further, DOE has scaled its engineering analysis to encompass these larger units. Although the number of units shipped is estimated to represent a fraction of a percentage of total covered shipments, DOE has designed these scaled models as new representative units on account of starting from an unregulated baseline, as compared to the rest of the market, for which the baseline transformer complies with existing energy conservation standards. For liquid-immersed distribution transformers, representative unit 17 corresponds to a three-phase 3,750 kVA unit. For medium-voltage dry-type distribution transformers, representative units 18 and 19 correspond to a three-phase 3,750 kVA unit with a BIL of 46–95 kV and greater than 96 kV, respectively.

DOE has estimated the distribution transformer efficiency by assuming these out-of-scope units are purchased

based on lowest first cost and would rely on similar grades of electrical steel as the distribution transformers that are currently in-scope units but would not currently be meeting any efficiency standard.

DOE requests comment and data as to the number of shipments of three-phase, liquid-immersed, distribution transformers greater than 2,500 kVA that would meet the in-scope voltage limitations and the distribution of efficiencies of those units.

DOE requests comment and data as to the number of shipments of three-phase, dry-type, distribution transformers greater than 2,500 kVA that would meet the in-scope voltage limitations and the distribution of efficiencies of those units.

2. Equipment Classes

DOE must specify a different standard level for a type or class of product that has the same function or intended use, if DOE determines that products within such group: (A) consume a different kind of energy from that consumed by other covered products within such type (or class); or (B) have a capacity or other performance-related feature which other products within such type (or class) do not have and such feature justifies a

higher or lower standard. (42 U.S.C. 6316(a); 42 U.S.C. 6295(q)(1)) In determining whether a performance-related feature justifies a different standard for a group of products, DOE must consider such factors as the utility to the consumer of the feature and other factors DOE deems appropriate. *Id.* Any rule prescribing such a standard must include an explanation of the basis on which such higher or lower level was established. (42 U.S.C. 6316(a); 42 U.S.C. 6295(q)(2))

Eleven equipment classes are established under the existing standards for distribution transformers, one of which (mining transformers<sup>43</sup>) is not subject to energy conservation standards. 10 CFR 431.196. The remaining ten equipment classes are delineated according to the following characteristics: (1) Type of transformer insulation: Liquid-immersed or dry-type, (2) Number of phases: single or three, (3) Voltage class: low or medium (for dry-type only), and (4) Basic impulse insulation level (BIL) (for MVDT only).

Table II.1 presents the eleven equipment classes that exist in the current energy conservation standards and provides the kVA range associated with each.

TABLE IV.1—CURRENT EQUIPMENT CLASSES FOR DISTRIBUTION TRANSFORMERS

EC * #	Insulation	Voltage	Phase	BIL rating	kVA range
EC1 .....	Liquid-Immersed .....	Medium .....	Single .....	.....	10–833 kVA
EC2 .....	Liquid-Immersed .....	Medium .....	Three .....	.....	15–2500 kVA
EC3 .....	Dry-Type .....	Low .....	Single .....	.....	15–333 kVA
EC4 .....	Dry-Type .....	Low .....	Three .....	.....	15–1000 kVA
EC5 .....	Dry-Type .....	Medium .....	Single .....	20–45 kV BIL .....	15–833 kVA
EC6 .....	Dry-Type .....	Medium .....	Three .....	20–45 kV BIL .....	15–2500 kVA
EC7 .....	Dry-Type .....	Medium .....	Single .....	46–95 kV BIL .....	15–833 kVA
EC8 .....	Dry-Type .....	Medium .....	Three .....	46–95 kV BIL .....	15–2500 kVA
EC9 .....	Dry-Type .....	Medium .....	Single .....	≥96 kV BIL .....	75–833 kVA
EC10 .....	Dry-Type .....	Medium .....	Three .....	≥96 kV BIL .....	225–2500 kVA
EC11 .....	Mining Transformers				

\* EC = Equipment Class.

In the August 2021 Preliminary Analysis TSD, DOE requested comment on a variety of other potential equipment setting factors. (August 2021 Preliminary Analysis TSD at p. 2–16–22) These comments are discussed in detail below.

a. Pole- and Pad-Mounted Transformers

DOE currently does not divide pole- and pad-mounted distribution transformers into separate equipment classes. In the August 2021 Preliminary Analysis TSD, DOE requested comment and data to characterize the effect of mounting configuration on distribution transformer efficiency, weight, volume, and likelihood of introducing

ferroresonance.<sup>44</sup> (August 2021 Preliminary Analysis TSD at p. 2–19)

Eaton commented that ferroresonance is rare and only occurs in pad mounted transformers. (Eaton, No. 55 at pp. 9–10) Eaton added that ferroresonance is more likely to occur in low no-load loss cores, and commented that these effects can be mitigated with certain core designs that are slightly less efficient. (Eaton, No. 55

<sup>43</sup> A mining distribution transformer is a medium-voltage dry-type distribution transformer that is built only for installation in an underground mine or surface mine, inside equipment for use in an underground mine or surface mine, on-board equipment for use in an underground mine or surface mine, or for equipment used for digging,

drilling, or tunneling underground or above ground, and that has a nameplate which identifies the transformer as being for this use only. 10 CFR 431.192.

<sup>44</sup> Ferroresonance refers to the nonlinear resonance resulting from the interaction of system

capacitive and inductive elements which can lead to damaging high voltages in distribution transformers. Pad-mounted distribution transformers that are delta-connected are particularly susceptible to ferroresonance effects.



at pp. 9–10) Eaton added that it has produced thousands of low-loss 5-leg distribution transformers and is unaware of a single occurrence of ferroresonance. (Eaton, No. 55 at pp. 9–10)

DOE did not receive any data suggesting that pole- and pad-mounted distribution transformers warrant separate equipment classes. As such, DOE has not proposed to amend the current equipment class structure for pole- and pad-mounted distribution transformers. Further, DOE includes both pole- and pad-mounted representative units in its engineering analysis.

#### b. Submersible Transformers

Certain distribution transformers are installed underground and, accordingly, may endure partial or total immersion in water. This scenario commonly arises for distribution transformers installed in chambers called “vaults”, which are commonly made of concrete. Access is typically, but not always, through an opening in the top (“ceiling”) face of the vault, through which the distribution transformer can be lowered for installation or replacement.

“Submersible”, “network” and “vault-based” are three attributes that often all apply to a particular distribution transformer unit, but which carry distinct meanings. Informally, “submersible” refers to ability to operate while submerged, “network” refers to ability to operate as part of a network of interconnected secondary windings as most typically occurs in urban environments, and “vault-based” refers to siting within a vault, which may be but is not necessarily below grade. A given distribution transformer, for example, may be installed within an above-grade vault but not rated as submersible. Similarly, a particular network distribution transformer may happen to be installed within a vault, but able to operate as well outside of a vault.

In the April 2013 Standards Final Rule, DOE included additional costs for vault replacements in the LCC analysis but noted there was no technical barrier that prevents network, vault-based and submersible distribution transformers from achieving the same efficiency levels as other liquid-immersed distribution transformers. 78 FR 23336, 23356–23357. In the August 2021 Preliminary Analysis TSD, DOE preliminarily stated that it would take a similar approach in applying the costs of vault enlargement as a function of increased distribution transformer volume for RU4 and RU5. (August 2021 Preliminary Analysis TSD at p. 2–89)

DOE requested comment on some of the options a customer is likely to explore before incurring the cost of vault expansion, such as using a lower-loss core steel, copper windings, or a less-flammable insulating fluid. (August 2021 Preliminary Analysis TSD at p. 2–20)

NEMA commented that when trying to fit into a given space, copper windings may allow for a 20 percent size reduction relative to aluminum and higher-grade core steels can help, but it is still sometimes very difficult to reduce footprint while meeting standards. (NEMA, No. 50 at p. 6) Carte requested an exclusion for retro fit designs. (Carte, No. 54 at p. 2)

Carte commented that most network transformers are lightly loaded but redundancy is quite important and as such many customers require high overload capabilities. (Carte, No. 54 at p. 1) Carte added that in certain applications, with limited space, there is reduced cooling which forces manufacturers to lower load loss at the expense of core loss to maintain reliable operation. (Carte, No. 54 at pp. 1–2) EEI recommended DOE include a separate product class for vault transformers. (EEI, No. 56 at p. 3)

As discussed, EPCA requires that a rule prescribing an energy conservation standard for a type of covered equipment specify a level of energy use or efficiency higher or lower than that which applies (or would apply) to any group of covered equipment that has the same function or intended use, if the Secretary determines that covered equipment within such group:

(A) Consume a different kind of energy from that consumed by other covered products within such type (or class); or

(B) Have a capacity or other performance-related feature that other products within such type (or class) do not have and such feature justifies a higher or lower standard from that which applies (or will apply) to other products within such type (or class). (42 U.S.C. 6313(a); 42 U.S.C. 6295(q)(1))

In making a determination of whether a performance-related feature justifies the establishment of a higher or lower standard, the Secretary must consider such factors as the utility to the consumer of such a feature, and such other factors as the Secretary deems appropriate. *Id.*

As noted, DOE previously determined there was no technical barrier to vault distribution transformers achieving similar efficiency standards as other similar distribution transformers. To the extent significant costs arise for more-

efficient units, they are generally installation costs (*i.e.*, expanding the size of the vault in which the distribution transformer is installed). Installation costs are addressed in the LCC and PBP analyses, as well as in consumer subgroup-specific analyses. These analyses account for the cost of difficult (*i.e.*, unusually costly) installations, including those subgroups of the population that may be differentially impacted by DOE’s consideration of amended energy conservation standards (*see* section IV.I.2 of this document).

Review of comments and the equipment market indicates that certain vault-based distribution transformers also are designed to operate in submersible applications. Because many vaults are subterranean, distribution transformers installed in such locations often require ability to operate while submerged. Installation below grade makes more likely that distribution transformers may operate while submerged in water and with other run-off debris. Distribution transformers for installation in such environments are designed to withstand harsh conditions, including corrosion.

The subterranean installation of submersible distribution transformers means that there is less circulation of ambient air for shedding heat. Operation while submerged in water and in contact with run-off debris, further impacts the ability of a distribution transformer to transfer heat to the environment and limits the alternative approaches in the external environment that can be used to increase cooling.

With respect to heat transfer, the industry standards governing submersible distribution transformers, *i.e.*, IEEE C57.12.23–2018 and C57.12.24–2016, specify that submersible distribution transformers, amongst other requirements, have their capacity rated for a maximum temperature rise of 55°C but have their insulation be rated for 65°C. IEEE C57.12.80–2010 defines submersible distribution transformer as “a transformer so constructed as to be successfully operable when submerged in water under predetermined conditions of pressure and time.”

Distribution transformer temperature rise tends to be governed by load losses. Often, design options that reduce load losses, increase no-load losses. While no-load losses make up a relatively small portion of losses at full load, no-load losses contribute approximately equally to load losses at 50 percent PUL, at which manufacturers must certify efficiency. The potentially reduced heat transfer of the subterranean

environment, combined with the possibility of operating while submerged, limits customers from meeting the temperature rise limitations through any choice other than reducing load losses. Therefore, the design choices needed to meet a lower temperature rise, may tend to lead manufacturers to increase no-load losses and may make it more difficult to meet a given efficiency standard at 50 percent PUL.

DOE recognizes that distribution transformers other than those designed for submersible operation may be derated (rated for a lower temperature rise) for other reasons, such as installation in ambient temperatures over 40°C, greater harmonic currents, or installation at altitudes above 1000 meters. However, the ability to improve the efficiency of such distribution transformers is not similarly limited as submersible distribution transformers because other options exist for distribution transformers above grade that would not be feasible in submerged environments, namely the ability to increase heat transfer, often with some additional cost, as opposed to only options that increase a distribution transformer's no-load losses. For example, distribution transformers installed above grade may be able to have more air circulation through radiators, improving the efficiency of radiators to shed heat, or adding external forced air cooling on a distribution transformer radiator, whereas such a measure would not be able to function as intended in a submerged environment.

Based on the foregoing discussion, DOE has tentatively determined that distribution transformers designed to operate while submerged and in contact with run-off debris have a performance-related feature which other types of distribution transformers do not have. While at max-tech efficiency levels both no-load and load losses are so low that distribution transformers generally do not meet their rated temperature rise, at intermediate efficiency levels, trading load losses for no-load losses allows distribution transformers to be rated for a lower temperature rise, however, it also may make it more difficult to meet any amended efficiency standard as no-load losses contribute proportionally more to efficiency at the test procedure PUL as compared to rated temperature rise. Therefore, DOE is proposing that providing for operation in installation locations at which the units are partially or wholly submerged in water justifies a different standard on account of the additional constraint which forces manufacturers to trade load losses for

no-load losses. DOE has modeled the derating of these distribution transformers and the associated costs associated with these submersible distribution transformers, as described in section IV.C.1 of this document.

In proposing separate equipment classes, DOE relies on physical features to distinguish one product class from another. While the IEEE definition of "submersible transformer" described how a submersible distribution transformer should perform, it does not include specific physical features that would allow DOE to identify submersible transformers from other general purpose distribution transformers. In reviewing industry standards, DOE notes that submersible distribution transformers are rated for a temperature rise of 55°C, have insulation rated for 65°C, have sealed-tank construction, and have the tank, cover, and all external appurtenances be made of corrosion-resistant material. Consistent with industry practice, DOE is proposing to define submersible distribution transformer as "a liquid-immersed distribution transformer so constructed as to be successfully operable when submerged in water including the following features: (1) is rated for a temperature rise of 55°C; (2) has insulation rated for a temperature rise of 65°C; (3) has sealed-tank construction; and (4) has the tank, cover, and all external appurtenances made of corrosion-resistant material."

DOE notes that IEEE C57.12.80–2010 defines several other types of distribution transformers that would potentially also meet the proposed definition of "submersible distribution transformer." IEEE C57.12.80–2010 defines "vault-type transformer" as "a transformer that is so constructed as to be suitable for occasional submerged operation in water under specified conditions of time and external pressure." Similarly, IEEE C57.12.80–2010 defines "network transformer" as "a transformer designed for use in a vault to feed a variable capacity system of interconnected secondaries," and states that "a network transformer may be of the submersible or of the vault type." To the extent network and vault-type distribution transformers were to meet the proposed definition of submersible distribution transformer, they would be included in the submersible distribution transformer equipment class.

DOE requests comment on its understanding and proposed definition of "submersible" distribution transformer. Specifically, DOE requests information on specific design characteristics of distribution

transformers that allow them to operate while submerged in water, as well as data on the impact to efficiency resulting from such characteristics.

DOE requests comment and data as to the impact that submersible characteristics have on distribution transformer efficiency.

#### c. Multi-Voltage-Capable Distribution Transformers

DOE's test procedure section 5.0 of appendix A requires determining the efficiency of multi-voltage-capable distribution transformers in the configuration in which the highest losses occur. In the August 2021 Preliminary Analysis TSD, DOE acknowledged that certain multi-voltage distribution transformers, particularly non-integer ratio<sup>45</sup> distribution transformers could have a harder time meeting an amended efficiency standard as it results in an unused portion of a winding when testing in the highest losses configuration and therefore reduces the measured efficiency. (August 2021 Preliminary Analysis TSD at p. 2–21) DOE requested comment on the difference in losses associated with multi-voltage distribution transformers. (August 2021 Preliminary Analysis TSD at p. 2–21)

Schneider commented that the higher nominal voltage tends to be more efficient, but the degree of increased losses depends on the kVA and difference between nominal voltages. (Schneider, No. 49 at p. 9) Schneider commented that the challenge for DOE is ensuring manufacturers are testing in worst case conditions and recommended DOE require manufacturers to identify these transformers and/or requiring on the distribution transformer nameplate. (Schneider, No. 49 at pp. 10–12) Schneider recommended DOE audit these multi-voltage designs to ensure they are testing under proper conditions. (Schneider No. 49 at pp. 12–13) Schneider expanded that these products should not have a separate equipment class but should be audited by DOE. (Schneider, No. 49 at p. 13)

Schneider's data indicates that the degree of coil loss increase associated with multi-voltage secondary distribution transformers ranges from 3.7 percent to 10.8 percent of full-load coil losses. (Schneider No. 49 at p. 10)

<sup>45</sup> For example, a primary winding low voltage configuration of 7200 V and a primary winding high voltage configuration of 14400 V represents a 2 times increase in voltage. Whereas a primary winding low voltage configuration of 7200 V and a primary winding high voltage configuration of 13200 V represents a non-integer increase in voltage leaving some portion of the coil unused.

DOE notes that each efficiency level considered offers a range of no-load and load loss combinations for meeting efficiency levels. While a multi-voltage transformer may require manufacturers to invest more in reducing no-load loss relative to a similar single voltage transformer, it would generally still be able to serve those customers' needs that request a multi-voltage distribution transformer.

ERMCO and NEMA acknowledged that some multi-voltage units may have a harder time achieving efficiency standards but did not provide a recommendation as to how to treat them. (ERMCO, No. 45 at p. 1; NEMA, No. 50 at p. 6) Eaton commented that transformers with multiple voltage rating and non-whole integer ratings have unused turns and require additional space in the core window leading to higher losses. (Eaton, No. 55 at p. 12) Carte identified emergency use distribution transformers which have multiple high voltages and low voltages and can be used anywhere in a system until a proper replacement is added, and asked how standards apply to them. (Carte, No. 54 at p. 2)

As discussed, EPCA requires that a rule prescribing an energy conservation standard for a type of covered equipment specify a level of energy use or efficiency higher or lower than that which applies (or would apply) to any group of covered equipment that has the same function or intended use, if the Secretary determines that covered equipment within such group:

(A) Consume a different kind of energy from that consumed by other covered products within such type (or class); or

(B) Have a capacity or other performance-related feature that other products within such type (or class) do not have and such feature justifies a higher or lower standard from that which applies (or will apply) to other products within such type (or class). (42 U.S.C. 6313(a); 42 U.S.C. 6295(q)(1))

In making a determination of whether a performance-related feature justifies the establishment of a higher or lower standard, the Secretary must consider such factors as the utility to the consumer of such a feature, and such other factors as the Secretary deems appropriate. *Id.*

DOE acknowledges that multi-voltage distribution transformers, specifically those with non-integer ratios, offer the performance feature of being able to be installed in multiple locations within the grid (such as in emergency applications) and easily upgrade grid voltages without replacing a distribution

transformer. These transformers are often used in upgrading distribution line voltages and as such when the distribution line voltage is upgraded, these distribution transformers would have greater efficiency than their certified efficiency. These distribution transformers have additional, unused winding turns when operated at their lower voltage which increase losses. However, once the distribution grid has been increased to the higher voltage, the entire winding will be used, increasing the efficiency of the product. However, DOE lacks data as to the degree of no-load loss and load loss increase associated with transitioning from a single primary and secondary voltage distribution transformer to a multi-voltage distribution transformer.

DOE notes that the NRCAN regulations specify that "For a three-phase transformer having multiple high-voltage windings and a voltage ratio other than 2:1, the minimum energy efficiency standard from the table or interpolated is reduced by 0.11." Similarly, EU regulations permit between a 10 to 20 percent increase in load losses for dual voltage transformers and between 15 and 20 percent increase in no-load losses, depending on the type of dual voltage.

Schneider commented that multi-voltage transformers do not need a lesser standard as it is a manufacturers choice to produce them. (Schneider, No. 49 at p. 10) Schneider added that they have many non-integer multi-voltage ratios offered and do not believe it is necessary to create a new class for these products. (Schneider, No. 49 at p. 10)

Stakeholder comments suggest that the difference in voltages associated with multi-voltage distribution transformers is relatively small. Further, technologies that increase the efficiency of single-voltage distribution transformers also increase the efficiency of multi-voltage distribution transformers. For these reasons, DOE has not proposed a separate equipment class for multi-voltage-capable distribution transformers with a voltage ratio other than 2:1.

However, DOE may consider a separate product class if sufficient data is provided to demonstrate that these distribution transformers justify a different energy conservation standard. DOE notes that these distribution transformers would not be permitted to have a lesser standard than currently applicable to them on account of EPCA's anti-backsliding provisions at 42 U.S.C. 6295(o).

DOE requests data on the difference in load loss by kVA for distribution transformers with multiple-voltage

ratings and a voltage ratio other than 2:1.

DOE request data on the number of shipments for each equipment class of distribution transformers with multi-voltage ratios other than 2:1.

#### d. High-Current Distribution Transformers

Carte commented that low secondary voltages with high currents can increase the cost and weight of a distribution transformer and may require switching to copper. (Carte, No. 54 at p. 1) NEMA commented that new production machines may be needed for certain winding configurations near technical limits, such as large kVA distribution transformers with 208 voltage secondaries. (NEMA, No. 50 at p. 10) Eaton commented that lower voltage windings have higher currents which may require rectangular conductors and can make winding more complicated. (Eaton, No. 55 at p. 12) Eaton added that at some sizes, the conductor becomes too thick to be used in a transformer. (Eaton, No. 55 at p. 12) NEMA commented that these designs are on the cusp of max-tech today. (NEMA, No. 50 at p. 10)

Distribution transformers with high currents tend to have increased stray losses which can impact the efficiency of distribution transformers. NEMA cited a 2,000 kVA design with a 208V secondary where buss losses contribute approximately 12 percent to the full load losses of the transformer. (NEMA, No. 50 at p. 5) DOE notes that NRCAN regulations exclude transformers with a nominal low-voltage line current of 4000 A or more. In general, this amperage limitation would impact large distribution transformers with low-voltage secondary windings.

DOE notes that in high-current applications, while stray losses may be slightly higher, manufacturers have the option to use copper secondaries to decrease load losses or a copper buss bar. Technologies that increase the efficiency of lower-current distribution transformers also increase the efficiency of high-current distribution transformers. To the extent new production machines would be needed to accommodate the increased strip widths associated with high-current distribution transformers, those would be accounted for in the manufacturer impact analysis. For these reasons, DOE has not proposed a separate equipment class for high-current distribution transformers.

However, DOE may consider a separate product class if sufficient data is provided to demonstrate that high-current distribution transformers justify

a different energy conservation standard. DOE notes that these distribution transformers would not be permitted to have a lesser standard than currently applicable to them on account of EPCA's anti-backsliding provisions at 42 U.S.C. 6295(o).

DOE requests data on the difference in load loss by kVA for distribution transformers with higher currents and at what current it becomes more difficult to meet energy conservation standards.

DOE requests data as to the number of shipments of distribution transformers with the higher currents that would have a more difficult time meeting energy conservation standards.

#### e. Data Center Distribution Transformer

In the April 2013 Standard Final Rule, DOE considered a separate equipment class for data center distribution transformers, defined as the following:

"i. Data center transformer means a three-phase low-voltage dry-type distribution transformer that—

(i) Is designed for use in a data center distribution system and has a nameplate identifying the transformer as being for this use only;

(ii) Has a maximum peak energizing current (or in-rush current) less than or equal to four times its rated full load current multiplied by the square root of 2, as measured under the following conditions—

1. During energizing of the transformer without external devices attached to the transformer that can reduce inrush current;

2. The transformer shall be energized at zero +/- 3 degrees voltage crossing of a phase. Five consecutive energizing tests shall be performed with peak inrush current magnitudes of all phases recorded in every test. The maximum peak inrush current recorded in any test shall be used;

3. The previously energized and then de-energized transformer shall be energized from a source having available short circuit current not less than 20 times the rated full load current of the winding connected to the source; and

4. The source voltage shall not be less than 5 percent of the rated voltage of the winding energized; and

(vii) Is manufactured with at least two of the following other attributes:

1. Listed as a Nationally Recognized Testing Laboratory (NRTL), under the Occupational Safety and Health Administration, U.S. Department of Labor, for a K-factor rating greater than K-4, as defined in Underwriters Laboratories (UL) Standard 1561: 2011 Fourth Edition, Dry-Type General Purpose and Power Transformers;

2. Temperature rise less than 130 °C with class 220<sup>(25)</sup> insulation or temperature rise less than 110 °C with class 200<sup>(26)</sup> insulation;

3. A secondary winding arrangement that is not delta or wye (star);

4. Copper primary and secondary windings;

5. An electrostatic shield; or

6. Multiple outputs at the same voltage a minimum of 15° apart, which when summed together equal the transformer's input kVA capacity."<sup>46</sup>

DOE did not adopt this definition of "data center distribution transformers" or establish a separate class for such equipment for the following reasons: (1) the considered definition listed several factors unrelated to efficiency; (2) the potential risk of circumvention of standards and that a transformer may be built to satisfy the data center definition without significant added expense; (3) operators of data centers are generally interested in equipment with high efficiencies because they often face large electricity costs, and therefore may be purchasing at or above the standard established and unaffected by the rule; and (4) data center operator can take steps to limit in-rush current external to the data center transformer. 78 FR 23336, 23358.

In the August 2021 Preliminary Analysis TSD, DOE stated that data center distribution transformers could represent a potential equipment class setting factor and requested additional data about the data center distribution transformer market, performance characteristics, and any physical features that could distinguish data center distribution transformers from general purpose distribution transformers. (August 2021 Preliminary Analysis TSD at p. 2–22)

DOE did not receive any comments as to physical features that could distinguish a data center distribution transformer from a general-purpose distribution transformer.

DOE requests comment as to what modifications could be made to the April 2013 Standard Final Rule data center definition such that the identifying features are related to efficiency and would prevent a data center transformer from being used in a general purpose application.

NEMA commented that most data center transformers are outside the scope due to kVA range, but those still within scope would likely have high loading and would not be favored for amorphous transformers. (NEMA, No. 50 at p. 6)

<sup>46</sup> 78 FR 23336, 23358.

Eaton commented that liquid-immersed distribution transformers are increasingly being used in data center applications. (Eaton, No. 55 at p. 10) Eaton added that the quantity and overall energy consumed in data center applications has increased significantly. (Eaton, No. 55 at p. 10) Eaton commented that the lifespan of a data center transformer would vary depending on loading. (Eaton, No. 55 at p. 11)

Eaton commented that liquid-immersed data center transformers are designed to operate between 50–75 percent PUL and are typically specified to meet DOE efficiency standards. (Eaton, No. 55 at pp. 10–11)

DOE did not receive any comments suggesting that data center distribution transformers warrant a separate product class. As such, DOE has not proposed a definition for data center distribution transformers and has not evaluated them as a separate product class. However, DOE may consider a separate product class if sufficient data is provided to demonstrate that data center transformers warrant a different efficiency level and can appropriately be defined. Distribution transformers used in data centers may sometimes, but not necessarily, be subject to different operating conditions and requirements which carry greater concern surrounding inrush current.

DOE requests comment regarding its proposal not to establish a separate equipment class for data center distribution transformers. In particular, DOE seeks comment regarding whether data center distribution transformers are able to reach the same efficiency levels as distribution transformers generally and the specific reasons why that may be the case.

DOE requests comment regarding any challenges that would exist if designing a distribution transformer which uses amorphous electrical steel in its core for data center applications and whether data center transformers have been built which use amorphous electrical steel in their cores.

DOE requests comment on the interaction of inrush current and data center distribution transformer design. Specifically, DOE seeks information regarding: (1) the range of inrush current limit values in use in data center distribution transformers; (2) any challenges in meeting such inrush current limit values when using amorphous electrical steel in the core; (3) whether using amorphous electrical steel inherently increases inrush current, and why; (4) how the (magnetic) remanence of grain-oriented electrical steel compares to that of

amorphous steel; and (5) other strategies or technologies than distribution transformer design which could be used to limit inrush current and the respective costs of those measures.

#### f. BIL Rating

Distribution transformers are built to carry different basic impulse level (“BIL”) ratings. BIL ratings offer increased resistance to large voltage transients, for example, from lightning strikes. Due to the additional winding clearances required to achieve a higher BIL rating, high BIL distribution transformers tend to be less efficient, leading to higher costs and be less able to achieve higher efficiencies. DOE separates medium-voltage dry-type distribution transformers into equipment classes based on BIL ratings. 10 CFR 431.196(c).

In the August 2021 Preliminary Analysis TSD, DOE noted stakeholder comments that evaluating additional liquid-immersed distribution transformers based on BIL rating would add additional complications for minor differences in losses. As such, DOE did not consider BIL in its evaluation of liquid-immersed distribution transformers.

In response, Howard commented that 150 kV and 200 kV BIL units should not have their efficiency standards increased as these units are already too large. (Howard, No. 59 at pp. 1–2) Carte commented that 200 kV BIL transformers have more insulation that increases the size of the transformer and therefore the losses of the transformer. (Carte, No. 54 at p. 1) Eaton commented that high BIL transformers can have a harder time meeting efficiency standards. (Eaton, No. 55 at p. 12) Neither Eaton, Howard nor Carte provided any data suggesting the degree of efficiency difference as BIL is increased. Based on the discussion in the preceding paragraphs, DOE is not proposing a separate equipment class based on BIL rating for liquid-immersed units but may consider it if sufficient data is provided.

DOE requests data as to how a liquid-immersed distribution transformer losses vary with BIL across the range of kVA values within scope.

Regarding MVDTs, NEMA commented that MVDT with BIL levels above 150 kV are essentially non-existent and would not represent a significant amount of energy savings if regulated. (NEMA, No. 50 at p. 7)

DOE notes that MVDTs above 150 kV BIL are currently regulated. In the August 2021 Preliminary Analysis TSD, DOE requested data on the change in efficiency associated with higher BIL

ratings for distribution transformers and the volume of dry-type distribution transformers sold with BIL ratings above 199 kV. DOE did not receive any data and therefore has maintained its current equipment class separation of MVDTs.

#### g. Other Types of Equipment

Stakeholders identified several other distribution transformer types that they noted may have a harder time meeting efficiency standards. NEMA commented that MVDTs at high altitude may require more air clearance and therefore must accommodate higher core loss, and as such, may warrant a separate equipment class. (NEMA, No. 50 at p. 5) Carte asked DOE to analyze main and teaser and Scott connected transformers which it stated are unique to certain industrial grids and can be very difficult or impossible to replace.<sup>47</sup> (Carte, No. 54 at p. 2)

Carte asked how efficiency standards apply to duplex transformers which have two kVA ratings on one transformer.<sup>48</sup> (Carte, No. 54 at p. 2) Carte asked if three winding simultaneous loading transformers used in solar applications to isolate the low-voltage qualify for an exemption. (Carte, No. 54 at p. 2)

DOE did not receive any data as to the degree of difference in efficiency associated with these distribution transformers. DOE has not considered any of the noted products as separate equipment classes in this NOPR analysis due to lack of data as to the shipments and reduction in efficiency associated with certain designs. Regarding how standards are applied to certain equipment, DOE notes that equipment that meets the definition of distribution transformer is subject to energy conservation standards at 10 CFR 431.196.

DOE requests comments and data on any other types of equipment that may have a harder time meeting energy conservation standards. Specifically, DOE requests comments as to how these other equipment are identified based on physical features from general purpose distribution transformers, the number of shipments of each unit, and the possibility of these equipment being used in place of generally purpose distribution transformers.

<sup>47</sup> Main and Teaser and Scott connected transformers are a special type of transformer which converts from three-phase energy to two phase energy or vice versa using two electrically-connected single-phase transformers

<sup>48</sup> Duplex transformers consist of two single-phase transformers assembled in a single enclosure. They are generally used to provide a large single-phase output in tandem with a smaller three-phase output

#### 3. Test Procedure

The current test procedure for measuring the energy consumption of distribution transformers is established at appendix A to subpart K of 10 CFR part 431. In a September 2021 TP Final Rule, DOE maintained that energy efficiency be evaluated at 50 percent PUL for liquid-immersed distribution transformers and medium-voltage dry-type distribution transformers and 35 percent PUL for low-voltage dry-type distribution transformers. 86 FR 51230. In the August 2021 Preliminary Analysis TSD, DOE acknowledged that its estimates for current root-mean-square (“RMS”) in-service loading is less than the test procedure PUL but noted there was uncertainty which makes it preferential to overestimate PUL rather than underestimate PUL. DOE noted that any potential energy savings that could be achieved by changing the standard PUL could also be achieved by increasing the stringency of the energy conservation standards. As such, DOE only considered distribution transformers that would meet energy conservation standards at DOE’s test procedure loading, but evaluated energy saving potential using in-service data and load growth estimates.

In response, CDA agreed with the test procedure loading and stated that they believe the loading will match future forecasts. (CDA, No. 47 at p. 2)

NEEA and the Efficiency Advocates commented that the test procedure PUL is too high and leads to designs that over-invest in load losses, and as such, DOE should reduce the test procedure PUL. (Efficiency Advocates, No. 52 at pp. 1–2; NEEA, No. 51 at pp. 7–8) The Efficiency Advocates commented that DOE’s preliminary analysis shows that intermediate energy savings can be achieved with small price increases if transformer designs are optimized for more realistic PULs and urged DOE to consider revising its test procedure PUL, given the preliminary analysis load growth estimates. (Efficiency Advocates, No. 52 at p. 2) The Efficiency Advocates commented that the negative savings at certain ELs reflect the fact that certain ELs would be met by decreasing load losses rather than no-load losses. (Efficiency Advocates, No. 52 at pp. 2–3) The Efficiency Advocates further referenced DOE’s hourly load model which they claim demonstrated a small percentage of hours above 50 percent PUL and indicates savings available at lower PULs. (Efficiency Advocates, No. 52 at p. 4) The Efficiency Advocates commented that a lower PUL permits greater savings for less costs, claiming that DOE’s data shows better optimizing

a transformer could yield 23 percent energy savings for only a 4 percent increase in costs. (Efficiency Advocates, No. 52 at pp. 4–5)

DOE notes that the potential energy savings cited by the Efficiency Advocates are based on a distribution transformer that is optimized at 35 percent PUL and is meeting current efficiency standards at 50 percent PUL. In the scenario where an alternative test procedure PUL is used, distribution transformers would not have to meet the current standard at 50 percent PUL, they would only have to meet a new standard at 35 percent PUL. DOE's analysis of energy conservation standards assumes consumers select a range of distribution transformers and applies a range of unique customer loading profiles to evaluate the impacts of amended energy conservation standards. In a theoretical evaluation of energy conservation standards at 35 percent PUL, the whole analysis would change as new distribution transformers would be able to be purchased by consumers that do not meet current standards at 50 percent PUL but may meet a standard at 35 percent PUL. Without doing a much more detailed analysis, it is a vast oversimplification to cite energy savings from a single distribution transformer. Further, DOE notes that many of the distribution transformers optimized for low PULs use amorphous cores and represent the design options with the highest efficiency at 50 percent PUL.

Powersmiths commented that measuring LVDT efficiency at a single load point is insufficient since the efficiency varies dramatically over the loading. (Powersmiths, No. 46 at p. 1) Powersmiths added that 35 percent PUL is not representative for LVDTs. (Powersmiths, No. 46 at p. 1) Powersmiths added that evaluating at 35 percent PUL enables manufacturers to publish peak efficiency rather than how their transformers perform in the real world. (Powersmiths, No. 46 at p. 2) Powersmiths commented that this practice misleads customers into thinking DOE compliant transformers save them the most money, when transformers optimized for lower loading could save more energy and money. (Powersmiths, No. 46 at p. 2)

Metglas commented that actual data shows current loading is low and as such, the liquid-immersed distribution transformers should be evaluated at 35 percent load and LVDTs should be evaluated at 20 percent load. (Metglas, No. 53 at p. 1; Metglas, No. 53 at p. 6)

Powersmiths added that the 35 percent PUL for LVDTs produces deceptively high savings estimates and pushing up efficiency at that point is

counterproductive. (Powersmiths, No. 46 at p. 2) Powersmiths recommended DOE work with organizations to reduce oversizing of distribution transformers. (Powersmiths, No. 46 at p. 2)

DOE agrees with stakeholders that current loading is lesser than the test procedure PUL. As such, DOE relies on the most accurate in-service PUL and load growth estimates to calculate energy savings potential. However, DOE evaluates the efficiency of distribution transformers and only includes distribution transformer models that would meet amended energy conservation standards at the test procedure PUL. The efficiency of distribution transformers over the duration of its lifetime and across all installations cannot be fully represented by a single PUL. A given transformer may be highly loaded or lightly loaded depending on its application or variation in electrical demand throughout the day. In the September 2021 TP Final Rule, DOE was unable to conclude that any singular PUL would be more representative than the current test procedure PUL because of (1) significant long-term uncertainty regarding what standard PUL would correspond to a representative average use cycle for a distribution transformer given their long lifetimes; and (2) given the uncertainty of future loading, there may be greater risk associated with selecting a test procedure PUL that is too low than a test procedure PUL that is too high. 86 FR 51230, 51240. Therefore, for purposes of evaluating the proposed standards in this document, DOE used the test procedure PUL. More discussion of the test procedure PUL may be found in the September 2021 TP Final Rule.

DOE disagrees with commenters' assertion that there is an inherent benefit associated with distribution transformers certified at an alternative PUL as no energy conservation standard exist at any alternative PUL. Further, DOE believes any benefits associated with a lower PUL are also achieved via amended energy conservation standards. DOE has presented plots in chapter 3 of the TSD to demonstrate how the design space of possible load loss and no-load loss combinations would change in the presence of amended energy conservation standards and if energy conservation standards were evaluated at an alternative PUL which helps demonstrate this conclusion.

Powersmiths commented that the current reporting system is flawed as factors like sub-standard batches of steel may result in noncompliant distribution transformers being shipped, and

recommended DOE should require third party testing of distribution transformers. (Powersmiths, No. 46 at pp. 6–7) DOE notes that it has no data suggesting manufacturers are shipping non-compliant distribution transformers. DOE notes that in the case of sub-standard steel batches, its certification requirements permit some degree of variability in equipment performance, as described at 10 CFR 429.47.

Powersmiths commented that high volume manufacturers optimize costs by using higher loss core steel and lower loss conductor material to meet the 35 percent legal limit. (Powersmiths, No. 46 at p. 2) Powersmiths recommended lowering the LVDT test procedure PUL or adding a core loss limit to secure real world energy savings. (Powersmiths, No. 46 at p. 2)

In the September 2021 TP Final Rule, DOE noted that on account of uncertainty associated with future distribution transformer loading, DOE is unable to conclude that any alternative single-PUL efficiency metric is more representative than the current standard PUL. 86 FR 51230, 51240. Therefore, DOE only evaluated distribution transformers that would meet amended efficiency standards at the current test procedure PUL. In its evaluation of energy savings, DOE used data representative of current in-service loading, as described in section IV.E. DOE does not make assumptions as to the maximum no-load or load losses of a transformer and instead relies on the consumer choice model, described in section IV.F.3 of this document, to evaluate the distribution transformers that consumers are likely to purchase.

#### 4. Technology Options

In the preliminary market analysis and technology assessment, DOE identified several technology options that would be expected to improve the efficiency of distribution transformers, as measured by the DOE test procedure.

Increases in distribution transformer efficiency are based on a reduction of distribution transformer losses. There are two primary varieties of loss in distribution transformers: no-load losses and load losses. No-load losses are roughly constant with PUL and exist whenever the distribution transformer is energized (*i.e.*, connected to electrical power). Load losses, by contrast, are zero at 0 percent PUL but grow quadratically with PUL.

No-load losses occur primarily in the transformer core, and for that reason the terms “no-load loss” and “core loss” are sometimes interchanged. Analogously, “winding loss” or “coil loss” is

sometimes used in place of “load loss” because load loss arises chiefly in the windings. For consistency and clarity, DOE will use “no-load loss” and “load loss” generally and reserve “core loss” and “coil loss” for when those quantities expressly are meant.

CDA commented that copper is the best conductor of electricity and enables a more compact and economical distribution transformer with a smaller tank, less core, and reduced oil. (CDA, No. 47 at p. 1) DOE notes that it has included some copper windings in its engineering analysis and recognizes that while copper may be more expensive than aluminum conductors, it represents a technology option that allows manufacturers to achieve smaller footprints or higher efficiencies in designs that are uniquely difficult to meet energy conservation standards.

EI commented that many technologies that decrease no-load losses, increase load losses and therefore DOE should utilize accurate projections of loading and recognize lower-loss core materials can have significantly higher load losses. (EII, No. 56 at p. 3)

Regarding amended energy conservation standards generally, Howard commented that no new technology options have come onto the market that would impact distribution transformer efficiency since the April 2013 Standards Final Rule. (Howard, No. 59 at p. 1) CDA commented that there should be no new standards and recommended DOE continue to evaluate the inputs to its analysis and new technologies. (CDA, No. 47 at p. 2) Powermiths noted that the market is in flux currently and recommended DOE delay the rulemaking while the market settles, require third party compliance enforcement, and invite stakeholder into DOE’s revision process. (Powersmiths, No. 46 at p. 7)

With respect to analyzed inputs, in the engineering analysis, DOE considered various combinations of the following technology options to improve efficiency: (1) Higher grade electrical core steels, (2) different conductor types and materials, and (3) adjustments to core and coil configurations. With respect to commenters’ suggestions that DOE delay standards or not issue amended standards, as noted previously, EPCA requires DOE to periodically determine whether more-stringent standards would be technologically feasible and economically justified, and would result in significant energy savings. 42 U.S.C. 6316(a); 42 U.S.C. 6295(m). DOE has tentatively concluded that the proposed standards represent the maximum

improvement in energy efficiency that is technologically feasible and economically justified, and would result in the significant conservation of energy. Specifically, with regards to technological feasibility, products achieving these standard levels are already commercially available for all product classes covered by this proposal. Accordingly, DOE has proceeded with the proposed standards.

5. Electrical Steel Technology and Market Assessment

Distribution transformer cores are constructed from a specialty kind of steel known as electrical steel. Electrical steel is an iron alloy which incorporates small percentages of silicon to enhance its magnetic properties, including increasing its magnetic permeability and reducing the iron losses associated with magnetizing that steel. Electrical steel is produced in thin laminations and either wound or stacked into a distribution transformer core shape.

Electrical steel used in distribution transformer applications can broadly be categorized as amorphous steel and grain-oriented electrical steel (“GOES”). There are many subcategories of steel within both amorphous steel and grain-oriented electrical steel. In the August 2021 Preliminary Analysis TSD, DOE assigned designated names to identify the various permutations of electrical steel. (August 2021 Preliminary Analysis TSD at pp. 2–31–36) DOE requested comment on its proposed naming convention. In response, Schneider and NEMA commented that the proposed naming convention used by DOE in the preliminary analysis is adequate. (Schneider, No. 49 at p. 13; NEMA No. 50 at p. 8)

The various markets, technologies, and naming conventions for amorphous and GOES are discussed in the following sections.

a. Amorphous Steel Market and Technology

Amorphous steel is a type of electrical steel that is produced by rapidly cooling molten alloy such that crystals do not form. The resulting product is thinner than GOES and has lower core losses, but it reaches magnetic saturation at a lower flux density.

DOE has identified three sub-categories of amorphous steel as possible technology options. These technology options and their DOE naming shorthand are shown in Table IV.2.

TABLE IV.2—AMORPHOUS STEEL TECHNOLOGY OPTIONS

DOE designator in design options	Technology
am .....	Traditional Amorphous Steel.
hibam .....	High-Permeability Amorphous Steel.
hibam-dr .....	High-Permeability, Domain-Refined, Amorphous Steel.

In the August 2021 Preliminary Analysis TSD, DOE requested comment and data on the quality and differences between the various amorphous steels on the market. (August 2021 Preliminary Analysis TSD at p. 2–31)

In response, Metglas commented that since amorphous steel was introduced, the core loss and stacking factor of the product has continually improved. (Metglas, No. 53 at pp. 2–3) Metglas stated that the current stacking factors are between 88–90 percent, which allows amorphous cores to be smaller than they have historically been. (Metglas, No. 53 at pp. 2–3) Eaton commented that the hibam material uses an 89 percent stacking factor and max flux of 1.40–1.42 tesla (T), as compared to traditional amorphous material which uses 88 percent stacking factor and a flux of 1.35–1.37 T. (Eaton, No. 55 at p.11) NEMA commented that the stacking factor of amorphous steel will never be as high as grain-oriented electrical steel. (NEMA, No. 50 at p. 8)

In the August 2021 Preliminary Analysis TSD, DOE noted that it did not include any designs specifically using the high-permeability amorphous steel. (August 2021 Preliminary Analysis TSD, at p. 2–45) DOE stated while there are some design flexibility advantages associated with using the high-permeability amorphous steel, it is only available from a single supplier. *Id.* In interviews, manufacturers noted they would be hesitant to rely on a single supplier of amorphous material for any higher volume unit. *Id.* DOE further stated that high-permeability amorphous steel can be integrated in manufacturer existing amorphous designs with minimal changes and therefore, DOE’s amorphous designs represent efficiencies that can be met with any amorphous steel. *Id.* DOE requested comment on its assumption that high-permeability amorphous steel could be used in existing amorphous designs with minimal changes. *Id.*

In response, Metglas commented that hibam can be used interchangeably with the standard am designs. (Metglas, No. 53 at p. 4) Metglas added that many transformers will maintain existing am design and operate the hibam material at the lower induction levels during

initial conversion, however, once designs are optimized for the hibam material, they cannot substitute standard am because standard am cannot reach the higher induction levels. (Metglas, No. 53 at p. 4) Metglas added that there is not a reduction in core losses when operating hibam at the same induction levels as standard am. (Metglas, No. 53 at p. 4)

NEMA and Eaton commented that hibam does not necessarily have higher efficiency than standard am at certain flux densities, and it is not universally true that hibam could be used in place of standard am without other design changes because at some flux densities, standard am can have lower no-load losses. (Eaton, No. 55 at p. 12–13; NEMA, No. 50 at p. 10)

Stakeholder comments confirm DOE's assumption that hibam material can be used in place of standard am designs, generally, although some specific applications may require redesigning. As such, including only standard am designs in the NOPR analysis is appropriate to avoid setting efficiency standards based on a steel type, hibam, that is only available from a single supplier. Under this approach, manufacturers have the option to achieve efficiency levels that require am steel using either the standard am material or the hibam material depending on their sourcing practices and preferences.

In the August 2021 Preliminary Analysis TSD, DOE noted that it was aware of a hibam material that uses domain refinement (“hibam-dr”) to further reduce core losses but did not have sufficient data or details as to whether it is commercially available. (August 2021 Preliminary Analysis TSD, at p. 2–31) In response, Metglas commented that they have introduced a mechanically domain refined hibam material that lowers core losses by an additional 20–30 percent in a finished core at a constant operating induction and there is a laser domain refined hibam product in the Asian market that Metglas is working to bring online in the domestic market. (Metglas, No. 53 at p. 3) Metglas commented that hibam-dr allows manufacturers to increase operating induction, relative to standard am, while reducing core losses by approximately 14 percent relative to the standard am operating induction. (Metglas, No. 53 at p. 4)

DOE further investigated this product in manufacturer interviews conducted for this NOPR analysis. In these interviews, DOE learned that the hibam-dr product is not yet widely available commercially. DOE has not included the hibam-dr product in its analysis because

this product has not been widely used in commercial applications at this point, DOE has not been able to verify that the core loss reduction of this product is maintained throughout the core production process, and it is only produced by one supplier.

In the April 2013 Standard Final Rule, one concern DOE noted with efficiency levels that would use amorphous steel was that there was only one global supplier of amorphous steel. 78 FR 23336, 23383. In the June 2019 Early Assessment RFI, DOE estimated global amorphous capacity of 190,000 metric tons and noted that the capacity and number of producers of amorphous steel has grown since the April 2013 Standards Final Rule. 84 FR 28239, 28247

Metglas commented that it is the only current producer of amorphous steel in the United States, however, there is current production in Japan and China along with amorphous capacity in Germany and South Korea. (Metglas, No. 11 at p. 2) Eaton pointed out that one barrier to steel manufacturers producing amorphous is that it would “cannibalize” conventional electrical steel manufacturers existing product offering and reduce the equipment utilization of existing equipment. (Eaton, No. 12 at p. 6)

In the August 2021 Preliminary Analysis TSD, DOE noted that it had identified numerous companies capable of producing amorphous material (of standard am quality or better). DOE stated that it did not apply any capacity constraints on the number of amorphous distribution transformers that could be selected because amorphous capacity is much greater than amorphous demand.

The Efficiency Advocates commented that the preliminary analysis shows a transition to amorphous material is cost justified and would bring U.S. standards in-line with other parts of the world. (Efficiency Advocates, No. 52 at p. 1) The Efficiency Advocates added that if amorphous core availability is a concern, DOE could require amorphous cores for certain transformer types that offer large savings. (Efficiency Advocates, No. 52 at p. 8)

Metglas estimated global amorphous capacity to be 150,000 metric tons annually with domestic capacity of 45,000 metric tons and ready ability to add another 75,000 metric tons within 18–24 months. (Metglas, No. 53 at p. 3) Metglas commented that the high-permeability amorphous grades (hibam) has been widely adopted by the North American market, making up 80 percent of their production, and allows for higher operating inductions which reduces amorphous core sizes. (Metglas,

No. 53 at p. 3) NEMA commented that amorphous steel sourced from China is more variable in its stacking factor and consistency. (NEMA, No. 50 at p. 8)

Stakeholder comments verify that global amorphous capacity is much greater than current demand and amorphous is produced by a variety of sources, although the quality may not be as consistent from everybody. Through manufacturer interviews, DOE learned that amorphous production capacity increased in response to the April 2013 Standards Final Rule, resulting in excess capacity because demand for amorphous steel did not correspondingly increase. While amorphous capacity today is currently less than the total distribution transformer total electrical steel usage, amorphous producers' response to the April 2013 Standards Final Rule demonstrates that if there was expected to be a market demand for amorphous steel, capacity would increase to meet that demand.

In interviews, several manufacturers noted that recent increases in prices, and foreign produced GOES prices, in particular, have led amorphous to be far more cost competitive. However, the industry has not necessarily seen an increase in amorphous transformer purchasing reflective of this pricing situation. Manufacturers noted that many of their processes are set-up to produce and process GOES steel and as such there is some degree of bias against amorphous transformers, regardless of what the first cost of a product is. In the August 2021 Preliminary Analysis TSD, DOE requested comment and data on the current amorphous core making capacity and the cost and time frame to add amorphous core production capacity. (August 2021 Preliminary Analysis TSD at p. 2–33)

In response, Metglas estimated amorphous core making capacity to be approximately 20,000 to 25,000 metric tons and noted that bringing on additional amorphous core manufacturing is relatively straightforward and inexpensive. (Metglas, No. 53 at p. 4) Metglas commented that there are conversion costs and capital costs associated with producing an amorphous core from amorphous steel laminations. (Metglas, No. 53 at p. 5) Eaton commented that the timeframe to add additional amorphous transformer capacity is dependent on whether additional design qualification testing is needed versus strictly capacity expansion and estimated one years for the former and one year for the latter. (Eaton, No. 55 at p. 11)



In the NOPR analysis, DOE has not applied any constraints to standard am steel purchasing in its evaluation of higher efficiency levels. DOE did constrain the selection of amorphous steel under the no-new-standards scenario to better match the current market share of amorphous distribution transformers, as discussed in section IV.F.2 of this document. DOE notes that any conversion costs associated with a transition from GOES production to amorphous distribution transformer production would be accounted for in the manufacturer impact analysis in section IV.J.

**b. Grain-Oriented Electrical Steel Market and Technology**

GOES is a type of electrical steel that is processed with tight control over its crystal orientation such that its magnetic flux density is increased in the direction of the grain-orientation. The single-directional flow is well suited for distribution transformer applications and GOES is the dominant technology in the manufacturing of distribution transformer cores. GOES is produced in a variety of thickness and with a variety of loss characteristics and magnetic saturation levels. In certain cases, steel manufacturers may further enhance the performance of electrical steel by introducing local strain on the surface of the steel, through a process known as domain-refinement, such that core losses are reduced. This can be done via different methods, some of which survive the distribution transformer core annealing process.

In the August 2021 Preliminary Analysis TSD, DOE identified four sub-categories of GOES as possible technology options. (August 2021 Preliminary Analysis TSD at p. 2–35) These technology options and their DOE naming short-hand are shown in Table IV.3.

**TABLE IV.3—GOES STEEL TECHNOLOGY OPTIONS**

DOE designator in design options	Technology
M-Grades .....	Conventional (not high-permeability) GOES.
hib .....	High-Permeability GOES.
dr .....	Non-Heat Proof, Laser Domain-Refined, High-Permeability GOES.
pdr .....	Heat-Proof, Permanently Domain-Refined, High-Permeability GOES.

DOE noted that for high-permeability steels, steel manufacturers have largely adopted a naming convention that includes the steel’s thickness, a brand

specific designator, followed by the guaranteed core loss of that steel in W/kg at 1.7 Tesla (“T”) and 50 Hz. Power in the U.S. is delivered at 60 Hz and the flux density can vary based on distribution transformer design, therefore the core losses reported in the steel name are not identical to their performance in the distribution transformer. However, the naming convention is generally a good indicator of the relative performance of different steels.

In the August 2021 Preliminary Analysis TSD, DOE identified several grades of GOES as potential technology options for distribution transformers. DOE requested comment and data on the availability of those steels, the ability to substitute various GOES grades for one another, any potential competition for steel supply for the large power transformer market, and the costs for steelmakers to add or convert capacity to higher performing GOES. (August 2021 Preliminary Analysis TSD at pp. 2–36–37)

Regarding potential competition for steel supply with the large power transformer industry, Schneider commented that power transformers and medium-voltage distribution transformers tend to be prioritized over the needs of the LVDT market and therefore supply issues can exist if LVDT manufacturers need to purchase the same core steel as medium-voltage distribution transformers. (Schneider, No. 49 at p. 14) Cliffs added that while high-permeability GOES works well in distribution transformers, it has historically been sold as a laser DR product to the power transformer market. (Cliffs, No. 57 at p. 1)

Conversely, NEMA suggested that electrical steels used in the large power transformer industry cannot be used in distribution applications, stating that the packaging and coating of steels targeting the large power transformer industry are not compatible with distribution transformer designs but added that large power transformers do compete for steel demand. (NEMA, No. 50 at p. 9)

Steel manufacturer literature generally markets GOES, and in particular hib and dr GOES, as suitable for use in either power or distribution transformers. Generally, a steel that is suitable for use in a power transformer may be suitable for use in a distribution transformer. As Schneider noted, and DOE confirmed in manufacturer interviews, power transformers tend to have priority and get the highest performing GOES. The industry also is volume driven and as such, the larger volume of the liquid-immersed market

tends to be served before the dry-type distribution market.

Regarding availability of GOES more generally, NEMA recommended DOE review the DOC study for perspective on steel availability. (NEMA, No. 50 at p. 8) NEMA and Powersmiths commented that recently there has been a notable increase in competition from the auto industry for electrical steel to produce electric motors in EVs. (NEMA, No. 50 at p. 9; Powersmiths, No. 46 at p. 5) NEMA and Powersmiths stated that some steel suppliers are shifting part of their grain-oriented electrical steel production capacity to non-oriented electrical steel production—limiting the availability and increasing prices of transformer-grade steels. (NEMA, No. 50 at p. 9; Powersmiths, No. 46 at p. 5) At the Public meeting, a representative from Carte commented that one major foreign steel manufacturer transitioned 50 percent of their grain-oriented production lines to non-oriented. (Zarnowski, Public Meeting Transcript, No. 40 at p. 36) A representative from LakeView Metals, commented that the non-oriented market is skyrocketing and there is an estimated global shortfall of 13 silicon production lines. (Looby, Public Meeting Transcript, No. 40 at p. 37)

Powersmiths commented they are currently experiencing diminished availability of several grades of steel and increased costs as steel suppliers are shifting to serving the EV market without plans to bring transformer-grade steel capacity back. (Powersmiths, No. 46 at p. 5) ERMCO agreed that supply of steel is currently limited and they have been able to obtain M3 steel, some hib, and am steel. (ERMCO, No. 45 at p. 1)

Recent supply issues and increases in costs are likely associated with a combination of general commodity related supply chain issues and competition from electric vehicles. DOE notes that variability in electrical steel prices and supply is not new and historically, DOE averages prices to come up with a representative value. As part of the August 2021 Preliminary Analysis TSD, DOE did evaluate alternative price scenarios. DOE has applied a 5-year average price in its base case analysis and conducted sensitivities for various other pricing scenarios, as discussed in section IV.C.3. DOE has also screened-out some of the highest performing GOES, where steel manufacturers are not able to mass produce GOES of similar quality, as discussed in section IV.B.

NEMA previously noted that there is currently only one domestic producer of GOES and that the sole domestic

producer does not have the capacity of high-grade electrical steel to serve the entire U.S. market, meaning the U.S. would be dependent on foreign electrical steel producers. (NEMA, No. 13 at p. 6–7)

Powersmiths commented that many of the high performing grades are only available from overseas suppliers and recent shipping and port access challenges have increased market uncertainty and availability to those grades. (Powersmiths, No. 46 at p. 6) Powersmiths stated that increased domestic capacity for GOES would require significant investment from industry and take years to come on. (Powersmiths, No. 46 at p. 6) Cliffs added that high-permeability GOES is a unique production line that would take years of planning, installation, and commissioning to convert existing M3 lines to high-permeability. (Cliffs, No. 57 at pp. 1–2) Cliffs stated that domestic steel is currently well-suited to serve distribution applications and higher standards would negatively impact the ability of domestic steel manufacturers to serve the distribution transformer market. (Cliffs, No. 57 at p. 2) Cliffs commented that higher efficiency levels would drastically hurt M3, and correspondingly domestic manufacturing, leaving the only domestic products as M2 and some high-permeability GOES grades. (Cliffs, No. 57 at p. 1) Cliffs commented that its electrical steel is produced with recycled steel scrap in an electric arc furnace, making it some of the greenest steel in the world. (Cliffs, No. 57 at p. 1)

DOE did constrain the selection of electrical steel under the no-new-standards scenario to better match the current market share of electrical steel, as discussed in section IV.F.2. In its evaluation of future standards, DOE assumed that steel manufacturers would provide the electrical steel qualities required by the market. In cases where fewer steel suppliers offer a grade of GOES, this is reflected by higher prices in DOE's analysis.

#### 6. Distribution Transformer Production Market Dynamics

Distribution transformer manufacturers either make or buy transformer cores; some do both. Further, distribution transformer manufacturers may choose to produce transformers domestically or produce them in a foreign country and import them to the United States. This creates three unique pathways for producing distribution transformers: (1) producing both the distribution transformer core and finished transformer domestically;

(2) producing the distribution transformer core and finished transformer in a foreign country and importing into the United States; (3) purchasing distribution transformer cores and producing only the finished transformer domestically. Each of these pathways has unique advantages and disadvantages which manufacturers have employed to maintain a competitive position.

First, manufacturers who produce distribution transformer cores and finished transformers domestically are able to maintain greater control of their lead times, potentially offering shorter lead times to their customers. This is particularly advantageous in servicing emergency applications with unique characteristics. This manufacturing approach is more common in certain liquid-immersed and medium-voltage dry-type applications, where customers may have unique voltage specifications that may not be routinely produced by all manufacturers but may be required on short notice.

As discussed, however, there is currently only one domestic manufacturer of grain-oriented electrical steel and one domestic manufacturer of amorphous steel. Under the current market dynamics with tariffs applied to all, raw imported electrical steel, these manufacturers are limited in where they can source their raw steel. As such, they may not have access to all of the types of steels available in the global market and may have different material prices from foreign core producers. While in theory, these manufacturers have the option to purchase electrical steel from foreign producers, they would be subject to the 25-percent tariff. Similarly, in theory, they have the option to purchase either grain-oriented electrical steel or amorphous electrical steel domestically.

DOE assumes that in the presence of amended standards, those manufacturers currently producing both cores and finished transformers domestically would still value the advantages of in-house domestic core production and would change their in-house production processes to accommodate the required core production equipment or required electrical steel grades.

Second, for manufacturers producing both the distribution transformer core and finished transformer in a foreign country and importing into the United States, they are able to control the in-house core production and therefore have similar advantages to those producing cores domestically. Further, because finished transformer imports are not currently subject to tariffs, they

have access to the entire global market of electrical steel types and prices without the additional 25 percent tariff. However, these manufacturers may require increased management of electrical steel supply chains, as they are often purchasing electrical steel from overseas producers which may have longer lead times than sourcing electrical steel from domestic sources.

Similar to domestic manufacturers, DOE assumes that in the presence of amended standards, those manufacturers producing both cores and transformers outside the United States would still value the advantages of in-house core production and would change their in-house production processes to accommodate the required core production equipment or required electrical steel grades.

Third, manufacturers who purchase cores to manufacture distribution transformers are able to avoid the labor and capital equipment associated with producing transformer cores. In part for this reason, it is increasingly common among small businesses. Further, because distribution transformer cores are not subject to tariffs, purchasing cores also allows manufacturers to more easily transition between various steel grades and various steel suppliers, both international and domestic. Similarly, it is easier for manufacturers who outsource cores to transition between GOES and amorphous steel grades since it eliminates the need to use different core production equipment for each steel type as the process of converting a core into a transformer is relatively similar for both GOES and amorphous steels.

The primary disadvantages of outsourcing cores are that (1) transformer manufacturers may have less control over core, and therefore transformer, delivery lead times and (2) transformer manufacturers will pay a higher cost per pound of steel because they are purchasing partially processed products as compared to manufacturers who are producing their own cores.

DOE assumes that in the presence of amended standards, these manufacturers would switch from purchasing one grade of electrical steel core to a higher grade of electrical steel core.

In summary, DOE does not view any one of these core and transformer production pathways as necessarily becoming more advantaged or disadvantaged in light of the standards proposed in this notice relative to the present. In the current market, all three pathways act as viable options for manufacturers to find and maintain a competitive position. DOE does not

have a reason to believe that the proposed standards would alter the ways in which distribution transformer manufacturers approach manufacturing or their current sourcing decisions given all three production options continue to be available. DOE seeks comment on the distribution transformer market and whether the standards proposed will alter the current production pathways.

### B. Screening Analysis

DOE uses the following five screening criteria to determine which technology options are suitable for further consideration in an energy conservation standards rulemaking:

#### (1) *Technological feasibility.*

Technologies that are not incorporated in commercial products or in working prototypes will not be considered further.

(2) *Practicability to manufacture, install, and service.* If it is determined that mass production and reliable installation and servicing of a technology in commercial products could not be achieved on the scale necessary to serve the relevant market at the time of the projected compliance date of the standard, then that technology will not be considered further.

(3) *Impacts on product utility or product availability.* If it is determined that a technology would have a significant adverse impact on the utility of the product for significant subgroups of consumers or would result in the unavailability of any covered product type with performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as products generally available in the United States at the time, it will not be considered further.

(4) *Adverse impacts on health or safety.* If it is determined that a technology would have significant adverse impacts on health or safety, it will not be considered further.

(5) *Unique-Pathway Proprietary Technologies.* If a design option utilizes proprietary technology that represents a unique pathway to achieving a given efficiency level, that technology will not be considered further due to the potential for monopolistic concerns. 10 CFR 431.4; 10 CFR part 430, subpart C, appendix A, sections 6(b)(3) and 7(b) (“Process Rule”).

In summary, if DOE determines that a technology, or a combination of technologies, fails to meet one or more of the listed five criteria, it will be

excluded from further consideration in the engineering analysis. The reasons for eliminating any technology are discussed in the following sections.

The subsequent sections include comments from interested parties pertinent to the screening criteria, DOE’s evaluation of each technology option against the screening analysis criteria, and whether DOE determined that a technology option should be excluded (“screened out”) based on the screening criteria.

#### 1. Screened-Out Technologies

In the August 2021 Preliminary Analysis TSD, DOE identified core deactivation as a potential technology option to improve efficiency but noted that it was not a generally accepted practice and would be associated with system wide savings, not savings as measured by DOE’s test procedure.

In response, NEMA commented that core deactivation would only be beneficial in certain settings and there are questions of reliability associated with shifting load which could lead to shorter lifetimes. (NEMA, No. 50 at p. 7) NEEA commented that core deactivation may impact maintenance of switchgear and other connected equipment. (NEEA, No. 51 at p. 5)

Due to the concerns cited by NEMA and NEEA regarding impacts on product lifetime and servicing of equipment, along with the fact that core deactivation would not impact the efficiency as measured by the DOE test procedure, DOE has screened-out core deactivation as a potential technology option.

DOE also identified less-flammable insulating liquid-immersed distribution transformer (“LFLI”) as a potential technology by which manufacturers could increase the capacity of a distribution transformer without increasing the size, potentially leading to energy savings. In response, NEMA commented that while LFLI is used by some customers to reduce unit size, particularly for pad mounts but rarely for pole mounts, it is generally pursued for greater reliability and not greater efficiency. (NEMA, No. 50 at pp. 7–8)

DOE notes that while there may be opportunity for a customer to maintain distribution transformer lifespan while increasing the loading on a transformer with LFLI technology, this would not impact the efficiency as measured by DOE’s test procedure. Further, DOE understands that there are potential consumer safety concerns with distribution transformers operating notably hotter, namely that the touch

temperature could be too high for consumers to safely interact with. Therefore, DOE has screened out LFLI as a potential technology option.

Regarding evaluating efficiency improvements associated with certain high-performing GOES grades, Powersmiths commented that the stability of availability, cost, and batch quality of some new steel grades is unproven. (Powersmiths, No. 46 at p. 5) Schneider expanded that steel mills are not perfectly consistent and only a portion of their production may meet a target loss performance. As such, it may not be feasible to set efficiency levels based on premium grades, for example an 075 or 070 grade steel, as steel manufacturers may not be able to consistently achieve the premium performance. (Schneider, No. 49 at p. 14) Schneider added that some higher performance steels are published in steel maker catalogs but are not widely available for commercial use. (Schneider, No. 49 at p. 13)

In GOES production, the product steel losses can vary somewhat between and within batches. Because of this variability in electrical steel, producers typically offer two loss specifications for their steels, a guaranteed core loss and a typical core loss. While some of the premium products identified in the August 2021 Preliminary Analysis TSD generally exist and are used in the market, they represent the upper end of the distribution of product performance. As commenters suggested, without further improvements in consistency of batch quality, it may not be reasonable to assume these products could be widely used in industry. Therefore, DOE has screened out certain high-performing GOES products. Specifically, DOE removed 23pdr075 and 20dr070 electrical steels from its engineering modeling due to concerns with its practicability to manufacture. DOE notes that these electrical steels could be used in certain applications but DOE has screened them out because of concerns that mass production of these products could not be achieved on the scale necessary to serve the distribution transformer market.

DOE listed several other technology options in the August 2021 Preliminary Analysis TSD for which it did not receive any comment. As such, DOE has retained those technology options as screened out.

Technology options screened out are listed in Table IV.4 with their bases for screening.

TABLE IV.4—SCREENED-OUT TECHNOLOGIES

Technology option	Basis for screening
Core Deactivation .....	Practicability to manufacture, install, and service; Adverse Impacts on Product Utility or Product Availability.
Less-Flammable Insulating Liquids	Adverse Impacts on Health or Safety.
Symmetric Core Design .....	Practicability to manufacture, install, and service.
23pdr075 and 23dr070 GOES Steel	Practicability to manufacture, install, and service.
Silver as a Conductor Material .....	Practicability to manufacture, install, and service.
High-Temperature Superconductors	Technological feasibility; Practicability to manufacture, install and service.
Amorphous Core Material in Stacked Core Configuration.	Technological feasibility; Practicability to manufacture, install, and service.
Carbon Composite Materials for Heat Removal.	Technological feasibility.
High-Temperature Insulating Material.	Technological feasibility.
Solid-State (Power Electronics) Technology.	Technological feasibility; Practicability to manufacture, install, and service.
Nanotechnology Composites .....	Technological feasibility.

2. Remaining Technologies

Through a review of each technology, DOE tentatively concludes that the remaining combinations of core steels, windings materials and core configurations as combinations of “design options” for improving distribution transformer efficiency met all five screening criteria to be examined further as design options in DOE’s NOPR analysis.

DOE has initially determined that these technology options are technologically feasible because they are being used or have previously been used in commercially-available products or working prototypes. DOE also finds that all of the remaining technology options meet the other screening criteria (*i.e.*, practicable to manufacture, install, and service and do not result in adverse impacts on consumer utility, product availability, health, or safety, unique-pathway proprietary technologies). For additional details, see chapter 4 of the NOPR TSD.

C. Engineering Analysis

The purpose of the engineering analysis is to establish the relationship between the efficiency and cost of distribution transformers. There are two elements to consider in the engineering analysis; the selection of efficiency levels to analyze (*i.e.*, the “efficiency analysis”) and the determination of product cost at each efficiency level (*i.e.*, the “cost analysis”). In determining the performance of higher-efficiency equipment, DOE considers technologies and design option combinations not eliminated by the screening analysis. For each equipment class, DOE estimates the baseline cost, as well as the incremental cost for the equipment at efficiency levels above the baseline. The output of the engineering analysis is a set of cost-efficiency “curves” that

are used in downstream analyses (*i.e.*, the LCC and PBP analyses and the NIA).

1. Representative Units

Distribution transformers are divided into different equipment classes, categorized by the physical characteristics that affect equipment efficiency. DOE’s current energy conservation standards at 10 CFR 431.196 divide distribution transformers based on the following characteristics: (1) capacity (kVA rating), (2) voltage rating, (3) phase count, (4) insulation category (*e.g.*, “liquid-immersed”), and (5) BIL rating.

Because it is impractical to conduct detailed engineering analysis at every kVA rating, DOE conducts detailed modeling on “representative units” (“RUs”). These RUs are selected both to represent the more common designs found in the market and to include a variety of design specification to enable generalization of the results. In the August 2021 Preliminary TSD, DOE presented 14 representative units and noted they were unchanged from the April 2013 Standards Final Rule. (August 2021 Preliminary TSD at p. 2–41)

In response to the August 2021 Preliminary TSD, Howard commented that RU3 is not a very good representative unit because it is not common and should be replaced with a more common unit. (Howard, No. 59 at p. 2) DOE agrees that RU3, corresponding to a 500 kVA, single-phase, liquid-immersed distribution transformer, is generally larger than the more common capacities included in equipment class 1. However, as noted, DOE’s RUs are designed to include both common units and units included to improve generalization. RU3 is included to improve scaling of results to the larger units within the scope of

equipment class 1. Therefore, RU3 has been retained in this NOPR.

Carte commented that the representative units used by DOE are representative of common/typical sizes but the extremes were not analyzed, where meeting efficiency standards tend to be the hardest. (Carte, No. 54 at p. 1) Carte added that certain designs are forced to use high-end grain-oriented electrical steel and copper windings or in certain cases are unable to be met by Carte. (Carte, No. 54 at p. 1)

Eaton commented that the representative units are good choices for the highest volume transformers, however, as efficiency standards increase, efficiency standards may not be achievable at the scope extremes. (Eaton, No. 55 at p. 12)

It is true that certain extreme designs may have more difficulty achieving efficiency standards while still being requested by consumers. Most applications would generally be able to use amorphous steel to achieve higher efficiencies, including at efficiency levels beyond DOE’s max-tech. DOE selected design units to include both large and small distribution transformers across the various representative units and DOE’s modeling of the selected representative units includes amorphous designs which achieve efficiencies above DOE’s max-tech for all RUs. This indicates that there is room for even extreme designs to meet efficiency standards using technologies modeled by DOE.

DOE requests data demonstrating any specific distribution transformer designs that would have significantly different cost-efficiency curves than those representative units modeled by DOE.

To assess the impact of expanding the scope of the definition of “distribution transformer” in 10 CFR 431.192 to include distribution transformers up to 5,000 kVA, DOE is evaluating three new

RUs. DOE scaled the results for RU5, RU12, and RU14 to represent RU17, RU18, and RU19, respectively, each of which are rated at 3,750 kVA. Results were generated for RU17, RU18, and RU19 using the scaling rules for dimensions, transformer weight, no-load losses, load losses, etc., as described in Appendix 5C of the TSD.

DOE notes that it only includes distribution transformers in the downstream analysis that would meet or exceed current energy conservation standards. Because RU17, RU18, and RU19 represent an expansion in scope, they are not currently subject to energy conservation standards. As such, all modeled designs are included in the downstream analysis, regardless of efficiency and DOE relies on the consumer choice model to determine the efficiency of distribution transformers selected at baseline. DOE has described these results and shown the cost-efficiency curves for these scaled units in Chapter 5 of the TSD.

DOE requests comment on its methodology for scaling RU5, RU12, and RU14 to represent the efficiency of units above 3,750 kVA.

Distribution transformers designed for submersible applications may be disadvantaged in meeting efficiency standards on account of having to meet efficiency standards with reduced cooling ratings. To explore this specification limitation, DOE has proposed a definition for submersible distribution transformers. In this NOPR, DOE is evaluating those submersible distribution transformers as a separate equipment class. DOE has modified the engineering results for RU4 and RU5 to represent two new RUs, RU15 and RU16. RU15 and RU16 represent common three-phase submersible distribution transformers. To account for the thermal derating that is associated with submersible distribution transformers, DOE evaluated RU15 and RU16 as having their nameplates derated by one standard kVA size relative to the efficiency of RU4 and RU5. That is, while RU4 is a 150 kVA three-phase, liquid-immersed distribution transformer, RU15 is a 112.5 kVA three-phase, liquid-immersed, submersible distribution transformer. Similarly, while RU5 is a 1,500 kVA three-phase, liquid-immersed distribution transformer, RU16 is a 1,000 kVA three-phase, liquid-immersed distribution transformer. DOE calculated the efficiency of RU15 and RU16 based on their new nameplate and assuming no-load losses are the same and load losses scale with the quadratic of load. DOE also modified the cost of the tank material from carbon steel to

stainless steel to represent the corrosion resistant properties of submersible distribution transformers. All other physical properties of the distribution transformer are the same.

DOE requests comment on its methodology for modifying the results of RU4 and RU5 to represent the efficiency of submersible liquid-immersed units. For other potentially disadvantaged designs, DOE has considered establishing equipment classes to separate out those that would have the most difficulty achieving amended efficiency standards, as discussed in section IV.A.2, but ultimately has determined not to include such separate equipment classes in the proposed standards. However, DOE requests data as to the degree of reduction in efficiency associated with various features.

## 2. Efficiency Analysis

DOE typically uses one of two approaches to develop energy efficiency levels for the engineering analysis: (1) relying on observed efficiency levels in the market (*i.e.*, the efficiency-level approach), or (2) determining the incremental efficiency improvements associated with incorporating specific design options to a baseline model (*i.e.*, the design-option approach). Using the efficiency-level approach, the efficiency levels established for the analysis are determined based on the market distribution of existing products (in other words, based on the range of efficiencies and efficiency level “clusters” that already exist on the market). Using the design option approach, the efficiency levels established for the analysis are determined through detailed engineering calculations and/or computer simulations of the efficiency improvements from implementing specific design options that have been identified in the technology assessment. DOE may also rely on a combination of these two approaches. For example, the efficiency-level approach (based on actual products on the market) may be extended using the design option approach to “gap fill” levels (to bridge large gaps between other identified efficiency levels) and/or to extrapolate to the max-tech level (particularly in cases where the max-tech level exceeds the maximum efficiency level currently available on the market).

Howard commented that there were inconsistencies in the efficiency levels presented in the webinar and the August 2021 Preliminary Analysis TSD. (Howard, No. 59 at p. 2) DOE notes that corrected values are presented in this analysis.

In this rulemaking, DOE relies on an incremental efficiency (design-option) approach. This approach allows DOE to investigate the wide range of design option combinations, including varying the quantity of materials, the core steel material, primary winding material, secondary winding material, and core manufacturing technique.

For each representative unit analyzed, DOE generated hundreds of unique designs by contracting with Optimized Program Services, Inc. (“OPS”), a software company specializing in distribution transformer design. The OPS software used two primary inputs: (1) a design option combination, which includes core steel grade, primary and secondary conductor material, and core configuration, and (2) a loss valuation.

DOE examined numerous design option combinations for each representative unit. The OPS software generated 518 designs for each design option combination based on unique loss valuation combinations. Taking the loss value combinations, known in the industry as A and B values and representing the commercial consumer’s present value of future no-load and load losses in a distribution transformer, respectively, the OPS software sought to generate the minimum total ownership cost (“TOC”). TOC can be calculated using the equation below.

$$TOC = \text{Transformer Purchase Price} + A * [\text{No Load Losses}] + B * [\text{Load Losses}]$$

From the OPS software, DOE received thousands of different distribution transformer designs, including physical characteristics, loading and loss behavior, and bill of materials. DOE used these distribution transformer designs, supplemented with confidential and public manufacturer data, to create a manufacturer selling price (“MSP”). The MSP was generated by applying material costs, labor estimates, and various mark-ups to each design given from OPS.

The engineering result included hundreds of unique distribution transformer designs, spanning a range of efficiencies and MSPs. DOE used this data as the cost versus efficiency relationship for each representative unit. DOE then extrapolated this relationship, generated for each representative unit, to all the other, unanalyzed, kVA ratings within that same equipment class.

In the August 2021 Preliminary Analysis TSD, DOE stated that it maintained the existing designs from the previous rulemaking and updated the material prices to get an updated manufacturer selling price. (August

2021 Preliminary Analysis TSD, at p. 2–45)

Howard commented that while updating pricing to \$2020 still gives valid designs, reoptimizing with new pricing would have given more accurate results. (Howard, No. 59 at p. 2)

DOE agrees that the most accurate results would be achieved by reoptimizing designs under current market practices. However, as commenters have attested, prices for many of the components making up distribution transformers are varied. Further, manufacturers may make different optimization decisions depending on their unique supply chains and manufacturing capacities. It would be impractical for DOE to reoptimize all designs with every change in material prices and to represent the specific supply chains of each manufacturer. To account for the variability in designs, DOE relies on a wide range of A and B values to initially develop designs reflective of the whole design space, not specific to any given day's pricing. DOE relies on 5-year average material pricing in its base analysis and conducts additional sensitivities to encompass additional pricing scenarios. Further, DOE's analysis of various efficiency levels includes a consumer choice model that selects a sub-set of designs based on the minimum MSP within a band-of-equivalence for a given efficiency level. As such, DOE's efficiency levels are not reflective of any one distribution transformer, but rather are designed to reflect the variety of distribution transformers customers would purchase at a given efficiency level.

In the August 2021 Preliminary Analysis TSD, DOE noted that it adapted models of grain-oriented electrical steel to reflect some of the lower loss steels that have come onto the market since the previous rulemaking. Specifically, DOE stated that it estimated the core loss of a similar design by multiplying the no-load loss by the ratio of the core losses at a given flux density between two steels. DOE noted that while these designs would not be true optimal designs, given that lower loss steel allows more flexibility in the load losses, however, stated that because DOE's designs cover such a wide range of A and B values, the results would be sufficiently accurate. DOE requested feedback on this approach. (August 2021 Preliminary Analysis TSD at p. 2–46)

Schneider commented that assuming the core losses of a swapped steel may be accurate for small reductions in core loss but bigger jumps could result in full

redesigns. (Schneider, No. 49 at pp. 14–15) Powersmiths and ERMCO commented that this approach does not lead to optimized designs.

(Powersmiths, No. 46 at p. 4; ERMCO, No. 45 at p. 1) NEMA commented that it is an oversimplification to assume that substituting of lower loss steel will lead to improved efficiency for a given design. (NEMA, No. 50 at p. 10) NEEA commented that DOE should not use this approach because new material may have different B–H curves and while it may be possible to use a direct swap—it generally isn't an acceptable practice. (NEEA, No. 51 at pp. 5–6) The Efficiency Advocates recommended DOE conduct new modeling as manufacturers who didn't optimize for new material would be at a competitive disadvantage. (Efficiency Advocates, No. 52 at pp. 6–7)

In response to stakeholder feedback, DOE ran new modeling for some design option combinations included in the NOPR. DOE compared this new modeling to its models that were established by swapping core steels and has presented some of these comparisons in chapter 5 of the TSD. DOE notes that modeled designs may be slightly different at a given A and B value as compared to the direct swap of core steels. However, across the range of A and B values included in the engineering analysis, and specifically at the minimum MSP for a given efficiency, the cost-efficiency curves are very similar. While DOE intends to update all the engineering designs to newly modeled designs to instill greater confidence in the analysis, some core steel swap designs are still used in the NOPR in order to ensure quick publication of the NOPR. These designs are noted in chapter 5 of the TSD. Given the similarities between the modeled designs and the direct swap of steel designs, DOE believes the updated modeling will not notably impact analysis results.

#### a. Design Option Combinations

As discussed, for each representative unit, DOE evaluates various design option combinations, which includes combinations of electrical steel, conductor material, and core construction techniques. In the August 2021 Preliminary Analysis TSD, DOE presented the various design option combinations it used for each representative unit. DOE noted that distributed gap wound cores typically need a high-temperature annealing process to relieve some of the stresses associated with the core winding process. (August 2021 Preliminary Analysis TSD at p. 2–46) As a result of

this annealing, laser-scribed domain-refined steels lose the core loss benefit of the domain-refinement. As such, DOE did not include any laser-scribed domain-refined steels in distributed gap wound core design option combinations. DOE requested comment on this decision.

In response, NEMA and Schneider supported DOE's decision not to include laser DR products in wound core constructions. (Schneider, No. 49 at p. 15; NEMA, No. 50 at p. 11) Similarly, Eaton agreed with DOE's decision not to include laser-scribed domain-refined steels in wound cores but noted that larger, three-phase units may be able to use laser-scribed domain-refined steels in wound cores if an AEM Unicore machine is used and the products are not annealed. (Eaton, No. 55 at p. 13)

DOE agrees with Eaton that in certain scenarios it may be possible to use laser-scribed dr products in wound core. But as Eaton described, the dr characteristics are only maintained if the core is not annealed. An unannealed core is going to have greater losses associated with the stresses from the bending of the electrical steel. So, the loss reduction associated with the better performing laser dr product is going to be countered by increased losses associated with stresses from bending the steel without annealing. As such, this approach does not necessarily reflect a higher efficiency product, but rather a similar performing product to using hib steel without domain-refinement and annealing the core. DOE did not receive any opposition to its decision to not include laser-scribed dr steels in its wound core designs and therefore maintained that approach in the NOPR analysis.

Regarding some of the specific design option combinations presented in the August 2021 Preliminary Analysis TSD, NEMA commented that GOES with performance lower than M4 is not used due to performance limitations. (NEMA, No. 50 at p. 8) Eaton commented that M5 isn't really used anymore and can be removed from RU4 engineering plots. Eaton also commented that M4 isn't really used in RU5 designs and can be removed from DOE's engineering plots. (Eaton, No. 55 at p. 20) Eaton commented that an Evans core transformer is not a valid option for wye-wye distribution transformers but noted that it was a moot point since the costs are greater. (Eaton, No. 55 at p. 20)

DOE acknowledges that some designs would be unlikely to be considered by many purchasers, but the engineering analysis is designed to explore the whole design space. The specific combinations identified by NEMA and

Eaton generally do not impact the analysis due to the first-cost of the product being too high and are included for completeness of the analysis.

Regarding use of thinner steels, NEMA commented that thinner GOES is more difficult to use, but not overly burdensome, whereas amorphous is a different thickness and width and cannot be dropped in. (NEMA, No. 50 at p. 9) Cliffs added that while there are specific applications where M2 is suitable, nearly all EOMS have stated it is not amenable to their manufacturing processes as it is thin and prone to folding and tearing in core making equipment. (Cliffs, No. 57 at p. 1)

DOE includes additional costs associated with handling of thinner electrical steels, as described in chapter 5 of the TSD. While M2 is included in the analysis, DOE has limited its selection in the base case scenario as described in section IV.F.3.a to be reflective of its current market share. In the presence of higher standards, M2 steel (or similarly performing hlb steel that wasn't modeled but has similar performance may be an option), may be a feasible design option for manufacturers although, it may not be the lowest first cost option.

Regarding the burdens with using amorphous steel, DOE has considered those costs in the manufacturer impact analysis in section IV.J of this document.

Eaton noted that while DOE's designs span the current definition for normal impedance range, if new designs are run in the future, a narrower impedance range should be used for RU4 and RU5 to align with IEEE C57.12.34, as too low an impedance could permit extremely high fault current in the event of a short circuit. (Eaton, No. 55 at p. 16)

As Eaton noted, DOE's impedance ranges align with the current definition for normal impedance range. The narrower impedance range cited by Eaton are achievable in DOE's models by all efficiency levels. DOE believes aligning with the definition of normal impedance range remains appropriate given that a variety of impedances are included at each efficiency level and consumers may specify specific impedances.

#### b. Data Validation

In the August 2021 Preliminary Analysis TSD, DOE stated that it had collected publicly available bid data for a variety of distribution transformers. DOE noted that the data was limited in its ability to compare cost and efficiency because the data was limited to liquid-immersed distribution transformers, there was significant variability in

primary voltages, the data didn't span the whole design space in all cases, much of the data was prior to implementation of the energy conservation standards as amended in the April 2013 Standards Final Rule (Effective January 1, 2016), and there was significant price variability at every efficiency. (August 2021 Preliminary Analysis TSD at p. 2–45) Rather than drawing any conclusions from this data, DOE relied on the reported no-load loss and full-load loss to estimate efficiency. DOE then presented the raw material prices and attempted to correct the material prices to show.

The Efficiency Advocates commented that the bid data shows significant differences in MSP and indicates that the engineering analysis need to be updated to reflect up-to-date materials, costs, and designs. (Efficiency Advocates, No. 52 at p. 7) Eaton commented that the average selling price in the plots comparing bid data and DOE engineering show average selling prices being much higher than DOE's analysis suggests. (Eaton, No. 55 at p. 22)

DOE is uncertain what significant difference in MSP the stakeholders are referring to as there is a wide range in the bid data and many of the points overlap between the bid data and DOE designs. Regardless, DOE has updated material costs in the NOPR analysis.

In presenting the bid data, DOE noted that it only has full load efficiency at rated operating temperature, and therefore applied a quadratic scaling and estimated temperature correction to estimate the efficiency as measured according to DOE's test procedure.<sup>49</sup>

Eaton commented that DOE's estimate for correcting the load loss in the bid data is insufficient. (Eaton, No. 55 at p. 20) Eaton expressed concern that a similar method was used to calculate DOE's 50 percent load loss values from the 100 percent load loss values. (Eaton, No. 55 at p. 20)

DOE did not use the same method to calculate 50 percent load loss values from the 100 percent values in it modeled data, it only did this in the bid data because the bid data did not have specifics as to how the equipment temperature varies with load and temperature correction was simply to estimate efficiency for a general comparison. DOE's modeled data included estimated load performance and temperature at a variety of transformer load points. DOE relied on the modeled transformer load loss at 50

percent load and corrected from the modeled operating temperature to DOE's reference temperature.

Rather than trying to estimate the rated efficiency of the public utility bid data from full load losses at rated temperature rises and make generalization as to how temperature would influence efficiency at rated PUL, DOE has looked at how the no-load and full load losses of the bid data compare to the full load losses of the DOE modeled data. These comparisons are shown in chapter 5 of the TSD. The comparisons show that DOE's modeled data aligns well with the design space of the public utility bid data.

In comparing DOE's modeled results to the public utility bid data, DOE realized that for RU4 and RU5, DOE models overestimated GOES no-load losses, and accordingly assumed manufacturers would need lower load losses in order to meet efficiency standards.

The process of converting electrical steel from a sheet into a formed core shape incurs some number of additional losses, known as a destruction factor. Eaton commented that when comparing amorphous laminations to a finished core, the destruction factor can be non-trivial and contribute an additional 40 percent to the core losses. (Eaton, No. 55 at p. 11) Similarly, in GOES cores, the destruction factor can be significant and varies by transformer type, manufacturing technique, and electrical steel type. In general, destruction factors are much more significant for three-phase distribution transformers than single-phase distribution transformers.

The destruction factor for three-phase wound core designs was originally chosen to be conservative and assume manufacturers would have higher destruction factors. Through interviews, DOE learned that manufacturers may be able to reduce destruction factors in wound cores using a Unicore design, and this is more common in larger, three-phase designs which tend to be produced in lesser volumes. In the NOPR analysis, DOE modified the destruction factor of three-phase, liquid-immersed, wound core, GOES distribution transformers to better align with the marketed Unicore destruction factors.<sup>50</sup> The resulting designs better align with the actual design space observed in real world data, as shown in chapter 5 of the TSD. The impact of this change is that GOES transformers achieve higher efficiency ratings for RU4 and RU5 than the August 2021

<sup>49</sup> See Chapter 5 of the NOPR TSD, available online at [www.regulations.gov/document/EERE-2019-BT-STD-0018-0022](http://www.regulations.gov/document/EERE-2019-BT-STD-0018-0022).

<sup>50</sup> Advertised destruction factors for Unicore available at [www.aemcores.com.au/technology/annealing/overview-and-the-benefit-of-unicore/](http://www.aemcores.com.au/technology/annealing/overview-and-the-benefit-of-unicore/).

Preliminary Analysis TSD suggested. It also introduces new transformers to the selectable design space which may have a lower MSP than if DOE had not made this change. While destruction factor does vary by manufacturing technique and manufacturers may use different methods, DOE believes that absent this change, it would be overestimating the cost of meeting efficiency standards with a GOES core as compared to an amorphous core.

Regarding DOE's use of modeling software, Powersmiths commented that OPS software is used by them and many manufacturers but noted that the eddy and stray losses in OPS models are "guestimates" from the design engineer and can vary largely. (Powersmiths, No. 46 at pp. 4–5) Powersmiths commented that inadequate stray loss estimates could result in simulation errors and should be examined more closely relative to transformer capacity. (Powersmiths, No. 46 at p. 5)

NEMA commented that its members' modeling programs account for stray, eddy, and other losses that appear largely absent from DOE models and while this was noted in the April 2013 Standards Final Rule, the efficiency levels in the preliminary analysis leave little flexibility to meet efficiency standards, making it more important now. (NEMA, No. 50 at p. 2) NEMA added by omitting these design factors, DOE's models do not represent true design feasibility and DOE should update models to add these losses. (NEMA, No. 50 at p. 2) NEMA commented specifically that in applications with a large amount of buss bars are required, efficiency standards are more difficult to meet. (NEMA, No. 50 at p. 5)

DOE transformer models do include estimates of stray and eddy losses. As commenters noted, the amount that these impact designs will be unique to manufacturer and specific transformer designs. In DOE's comparison of its liquid immersed designs to the design space in public utility bid data, DOE notes that its designs align relatively well with what is being built on the market. Further, DOE includes a bus and lead correction factor to MVDT designs based on an understanding that substation-style designs are quite common in the MVDT market.

DOE requests data as to how stray and eddy losses at rated PUL vary with kVA and rated voltages.

While certain unique designs may have higher stray and eddy losses, the incremental costs with meeting higher efficiency standards tends to follow a similar relationship. Particularly to the extent that amended efficiency

standards are met via a transition to lower-loss GOES or amorphous steel, the incremental cost to meet higher efficiency standards tends to be similar. In bid data, DOE observed that higher current transformers, which are more likely to have high stray losses, often have more amorphous bids. This suggests that transformers with high buss losses may have more favorable economics associated with meeting amended efficiency standards via amorphous steel.

Regarding validation of DOE's engineering analysis more generally, NEMA commented that its members cannot validate and offer corrections for every RU but suggested DOE hold a series of collaborative meetings where models are made more accurate and representative. (NEMA, No. 50 at p. 2) Eaton requested DOE provide more information about the distribution transformer design so manufacturers can confirm the designs align with their modeling. (Eaton, No. 55 at p. 20–22)

DOE has included additional engineering details in chapter 5 of the TSD to better explain its modeling and costing. Regarding NEMA's suggestion to hold collaborative meetings, DOE notes that in addition to soliciting public comment in a written format and public interviews, DOE conducts confidential manufacturer interviews through which manufacturers are invited to offer feedback. DOE has in the past, and as part of this analysis, made updates to its modeling to better reflect manufacturer realities. DOE will continue to update its analysis in response to manufacturer feedback and particularly to the extent modeling deviates from real world design constraints.

#### c. Baseline Energy Use

For each equipment class, DOE generally selects a baseline model as a reference point for each class, and measures changes resulting from potential energy conservation standards against the baseline. The baseline model in each product/equipment class represents the characteristics of a product/equipment typical of that class (e.g., capacity, physical size). Generally, a baseline model is one that just meets current energy conservation standards, or, if no standards are in place, the baseline is typically the most common or least efficient unit on the market.

DOE's analysis for distribution transformers generally relies on a baseline approach. However, instead of selecting a single unit for each efficiency level, DOE selects a set of units to reflect that different distribution transformer purchasers may not choose

distribution transformers with identical characteristics because of difference in applications and manufacturer practices. The mechanics of the customer choice model at baseline and higher efficiency levels are discussed in section IV.F.3 of this document.

#### d. Higher Efficiency Levels

DOE relies on a similar approach to its baseline engineering in evaluating higher efficiency levels. DOE's modeled units span the design space. In evaluating a higher efficiency level up until that maximum efficiency level that DOE considers ("max-tech"), DOE evaluates the modeled units that would exceed the higher efficiency level. Then, rather than selecting a single unit, DOE applies a customer choice model to evaluate the distribution transformers that would be purchased if standards were amended.

Howard commented that they looked at the various RUs and believe the current efficiency standards provide excellent value to consumers. (Howard, No. 59 at p. 2) Howard added that while they don't use OPS software, their internal software says to remain at the current efficiency levels and there is no need to have a NOPR as current standards are sufficient. (Howard, No. 59 at pp. 2–3) DOE appreciates Howard's comment but notes that they have not provided data to justify the results of their internal software. As noted previously, DOE has tentatively determined that the proposed standards are technologically feasible (based on models currently available in the market) and economically justified, and would result in significant energy savings.

The Efficiency Advocates commented that since DOE last revised its energy conservation standards, major economies around the world have set new efficiency thresholds that exceed U.S. energy conservation standards. (Efficiency Advocates, No. 52 at pp. 7–8) The Efficiency Advocates commented that the U.S. should aim to be a world leader in transformer efficiency. (Efficiency Advocates, No. 52 at pp. 7–8)

DOE notes that while it may look at foreign efficiency standards to get a better understanding of the global distribution transformer market, the U.S. has its own unique economic conditions, energy costs, and legal requirements. DOE has evaluated amended energy conservation standards based on the unique conditions of the U.S. and DOE's legal obligations under EPCA.



#### e. Load Loss Scaling

DOE energy conservation standards apply only at a single PUL for a given distribution transformer equipment class (50 percent for liquid-immersed distribution transformers and medium voltage dry-type distribution transformers and 35 percent for low-voltage dry-type distribution transformers). 10 CFR 431.196. However, distribution transformers exhibit varying efficiency with varying PUL. Distribution transformer no-load losses are generally constant with loading, while load losses vary approximately with the quadratic of the PUL. In practice, efficiency deviates slightly from this assumption as no-load losses are not perfectly constant and load losses are not perfectly quadratic. DOE requested comment on approximating load losses as a quadratic function of PUL.

NEMA commented that the quadratic approximation for load losses is sufficient. (NEMA, No. 50 at p. 11)

OPS' modeling includes details as to how a distribution transformer's loss and temperature vary across select load points. In determining the rated efficiency of a transformer model as it would be certified under DOE's test procedure, DOE relies on the modeled load losses at the PUL at which efficiency is calculated and corrects the load losses from the modeled temperature to the reference temperature. This value is used to calculate the rated efficiency of a distribution transformer model.

In the downstream analysis of a distribution transformer energy use and costs, DOE relies on the calculated full-load loss values and applies a quadratic approximation for what the load losses would be under real world loading conditions. Commenters have generally agreed that this approach is sufficient.

DOE noted that the full-load loss value DOE uses in its downstream analysis is the full-load loss estimate at the modeled transformer temperature. Full-load loss in industry is often reported at the rated temperature rise. Lower loss distribution transformers generally operate at lower temperatures, as they have less losses of heat to dissipate. Some transformers may operate well below their rated temperature even at full load. Therefore, the full-load losses used in the downstream analysis may be lower than the reported full-load losses at rated temperature rise.

NEEA commented that a quadratic scaling of load losses would not apply with harmonic frequencies and DOE should include a harmonic dependent

factor in its scaling model. (NEEA, No. 51 at p. 6) DOE notes that section 4.1 of appendix A specifies testing using a sinusoidal waveform. Therefore, harmonics would not impact the rated efficiency of a distribution transformer.

In DOE's downstream analyses, harmonics would generally lead to greater losses. While nonlinear loads exist, the impact of them is small and DOE does not have data suggesting they meaningfully impact system wide savings to the point that a quadratic approximation is inaccurate. Further, while harmonics may increase losses, relative to what a quadratic approximation would estimate, lower operating temperatures at low-loading, where most distribution transformers operate, would decrease losses relative to the quadratic approximation.

While other factors may cause the loss behavior of individual transformers in specific applications to deviate slightly from a true quadratic of the full-load losses, stakeholders have generally supported approximating load losses a quadratic of PUL and have not provided an alternative, more accurate method for approximating losses. As such, DOE has retained a quadratic load loss scaling in its analysis.

#### f. kVA Scaling

NEMA commented that the 0.75 power scaling rule is overly simplistic and has resulted in smaller kVA MVDTs having a hard time meeting efficiency standards. (NEMA, No. 50 at p. 9) Eaton commented that DOE's scaling rule as it applied to height, width, and depth of the core/coil assembly would not always be accurate due to certain bushing space requirements and design trade-offs pertaining to bushing heights relative to core/coil assembly heights. (Eaton, No. 55 at p. 16)

DOE has not received any comment or data suggesting an alternative method for scaling kVA and therefore has retained its scaling methods.

### 3. Cost Analysis

The cost analysis portion of the engineering analysis is conducted using one or a combination of cost approaches. The selection of cost approach depends on a suite of factors, including the availability and reliability of public information, characteristics of the regulated product, the availability and timeliness of purchasing the equipment on the market. The cost approaches are summarized as follows:

- *Physical teardowns:* Under this approach, DOE physically dismantles a commercially available product, component-by-component, to develop a detailed bill of materials for the product.

- *Catalog teardowns:* In lieu of physically deconstructing a product, DOE identifies each component using parts diagrams (available from manufacturer websites or appliance repair websites, for example) to develop the bill of materials for the product.

- *Price surveys:* If neither a physical nor catalog teardown is feasible (for example, for tightly integrated products such as fluorescent lamps, which are infeasible to disassemble and for which parts diagrams are unavailable) or cost-prohibitive and otherwise impractical (e.g., large commercial boilers), DOE conducts price surveys using publicly available pricing data published on major online retailer websites and/or by soliciting prices from distributors and other commercial channels.

In the present case, DOE conducted the analysis by applying materials prices to the distribution transformer designs modeled by OPS. The resulting bill of materials provides the basis for the manufacturer production cost ("MPC") estimates to which mark-ups are applied to generate manufacturer selling prices ("MSP"). The primary material costs in distribution transformers come from electrical steel used for the core and the aluminum or copper conductor used for the primary and secondary winding. DOE presented preliminary costing data and methodology in the August 2021 Preliminary Analysis TSD.

Regarding the cost analysis generally, NEMA commented that the material prices presented in the preliminary analysis do not reflect the post-COVID world and may be low by as much as half. (NEMA, No. 50 at p. 2) Eaton commented that PPI for power and distribution transformers has increased around 25 percent from 2020 levels and so costs are going to be higher and payback periods will be longer. (Eaton, No. 55 at p. 13) Howard echoed the concerns that Covid-19 has created labor and supply chain issues. (Howard, No. 59 at p. 1) Howard commented that their internal studies showed incremental MSPs as much as four times higher than what DOE showed in their preliminary analysis. (Howard, No. 59 at p. 2) Carte commented that the cost of both copper and aluminum have risen substantially in the past year. (Carte, No. 54 at pp. 3-4) Powersmiths added that market megatrends, such as the pandemic, decarbonization and electric vehicles may impact the analysis and create uncertainty. Powersmiths recommended DOE delay changes until these megatrends settle. (Powersmiths, No. 46 at pp. 6-7) Powersmiths and Carte commented that the market is in a state of flux right now and it may be

prudent to hold off any changes to efficiency standards until prices settle. (Carte, No. 54 at p. 4; Powersmiths, No. 46 at p. 7)

DOE data confirms that prices have been up recently, however, it is difficult to say for certain how those prices will vary in the medium to long terms and what those prices will be in the future. Rather than trying to project future prices, DOE relies on a five-year average in its base case and evaluates how the results would change with different pricing sensitivities. The recent price increases described by comments are incorporated into this five-year average and as a result, prices in the NOPR analysis are higher than they were in the August 2021 Preliminary Analysis TSD.

Eaton commented that in evaluating amended energy conservation standards, DOE should solicit quotations from at least three distribution transformer manufacturers for each representative unit and create a cost-down cost estimate to calibrate the bottom-up estimates. (Eaton, No. 55 at p. 19)

As DOE noted in section IV.C.2.b, DOE welcomes manufacturers to submit design and costing data for distribution transformers. DOE notes that in addition to soliciting public comment in a written format and public interviews, DOE conducts confidential manufacturer interviews through which much of the pricing data is gathered. DOE has made some updates to its cost analysis in response to manufacturer feedback, as described in the following sections.

#### a. Electrical Steel Prices

Electrical steel is one of the primary drivers of efficiency improvements and the relative costs associated with transitioning to lower loss steels can impact the cost effectiveness of amended efficiency standards. As noted, in section IV.A.5, the sourcing practices of individual manufacturers and production locations can impact prices as not all steel manufacturers produce the same electrical steels and trade actions have historically impacted the industry. DOE presented pricing in the August 2021 Preliminary Analysis TSD and requested comment. (August 2021 Preliminary Analysis TSD at p. 2–53)

ERMCO commented that the core steel costs presented in the preliminary analysis seem reasonable, but market growth in sectors, like EVs, may drive future prices up. (ERMCO, No. 45 at p. 1) Powersmiths commented that smaller manufacturers cannot access the DOE costs because volume drives price. Powersmiths noted that for one of the pdr steels it uses, the price has

increased as much as 61 percent and they do not see them returning to their lower prices. (Powersmiths, No. 46 at p. 6)

Carte commented that there is a global shortage of electrical steel and the price is up 20 percent in this year alone, with current prices up 76 percent from the 2008 peak. (Carte, No. 54 at p. 3) Carte noted that some industry sources expect prices to far exceed their 2008 peaks. (Carte, No. 54 at p. 3)

Carte cited several reasons for the increase in pricing. China has reduced export of GOES in recent years. (Carte, No. 54 at p. 3) Second, increased competition from non-oriented electrical steel serving the electric vehicle industry which has encouraged some steel manufacturers to convert GOES production lines to non-oriented electrical steel production lines. (Carte, No. 54 at p. 3)

DOE has updated pricing in this analysis in response to stakeholder feedback and confidential manufacturer interviews. Prices for electrical steel have increased significantly in recent years. Manufacturers noted that this price increase was particularly high for foreign electrical steel. DOE has applied a 5-year average price in its base case analysis. The prices in and conducted sensitivities for various other pricing scenarios, as discussed in section IV.C.3.

EI commented that higher standards may significantly impact all non-amorphous cores and limit choice and lead to higher prices for consumers considering limited availability of certain steel. (EII, No. 56 at p. 3)

DOE generally assumes pricing to be reflective of current market costs. While higher standards could limit which steels are available to meet standards, DOE notes that a handful of high-volume steels currently dominate the industry. Historically, when amended standards have been adopted, steel manufacturers have increased capacity of the electrical steel grades needed to meet amended efficiency standards. These materials may have higher costs, but they also tend to have higher costs in the current market. Rather than trying to predict what the cost and market breakdown would be in the presence of amended standards, DOE relies on a five-year average and conducts price sensitivities to ensure that energy savings are cost effective under different pricing structures.

Carte commented that while they don't purchase amorphous steel, DOE may want to verify that amorphous steel from China is still available and questioned if there were any domestic manufacturers of amorphous steel.

(Carte, No. 54 at p. 3) DOE notes that amorphous steel is produced domestically, as well as in China and Japan.

NEEA commented that its research suggests amorphous cores are lower first cost above 100 kVA single-phase or 500 kVA three-phase and there are several utilities commonly purchasing amorphous in the U.S. and Canada. (NEEA, No. 51 at p. 8) Metglas commented that its internal calculations show that amorphous steel is not close to price parity with GOES, using DOE's preliminary analysis assumed pricing. (Metglas, No. 53 at p. 2) Metglas commented that recent bid data shows amorphous transformers typically need an A value over \$7 per Watt and A to B ratio greater than \$3 per Watt for amorphous transformers to win on total ownership cost bids. (Metglas, No. 53 at p. 2) Metglas commented that DOE's preliminary analysis pricing of amorphous is accurate for sourced cores, but may be lesser for manufacturers who produce their own cores. (Metglas, No. 53 at p. 5)

Metglas commented that some transformer manufacturers source cores while other produce them internally. (Metglas, No. 53 at p. 5) NEMA disagreed with DOE's assumption that all amorphous cores are sourced and deferred to individual NEMA members as to their specific practices. (NEMA, No. 50 at p. 11)

Pricing for amorphous steel has increased slightly since the preliminary analysis but less so than GOES steel, and in particular foreign produced GOES. As such, amorphous steel is generally more competitive on first cost than it was in the preliminary analysis. As NEEA suggested, DOE did observe instances where amorphous transformers are lower first cost. However, that has not necessarily led to increased adoption, in part because most manufacturers' capital equipment is set-up for GOES core production. Amorphous transformer production would require manufacturer investment to fill high volume orders. As such, the first cost competitiveness of amorphous steel in certain applications has not necessarily corresponded to equivalent market share. DOE has continued to assume sourced core pricing for amorphous steel as most manufacturers do not have the capacity to produce cores in volume. While Metglas notes that manufacturers producing their own cores could have lesser costs, DOE notes in that scenario they would likely have additional retooling costs that would be aggregated over unit volume and increase core price relative to raw materials. More details regarding DOE's

pricing of amorphous steel are included in chapter 5 of the TSD.

For this NOPR, DOE's analysis shows that it is cost-effective to meet the proposed standards for liquid-immersed and low-voltage dry-type distribution transformers fabricated with amorphous steel cores. An energy conservation standard that significantly increases adoption of amorphous core distribution transformers would represent a substantial shift in the distribution transformer market. Such a shift could impact pricing and competition among steel suppliers in ways that may not be perfectly predictable, as the resulting market equilibrium would depend on decisions made by market participants outside of DOE's control. However, it is important to emphasize that price volatility in electrical steel and shifts in the market's competitive balance are not limited to amorphous steel.

Substantial volatility has characterized the U.S. steel market over the last several decades. From 2000 to 2007, U.S. steel markets, and more specifically the U.S. electrical steel market, began to experience pressure from several directions. Demand in China and India for high-efficiency, grain-oriented core steel contributed to increased prices and reduced global availability. Cost-cutting measures and technical innovation at their respective facilities, combined with the lower value of the U.S. dollar enabled domestic core steel suppliers to become globally competitive exporters.

In late 2007, the U.S. steel market began to decline with the onset of the global economic crisis. U.S. steel manufacturing declined to nearly 50 percent of production capacity utilization in 2009 from almost 90 percent in 2008. Only in China and India did the production and use of electrical grade steel increase for 2009.<sup>51</sup> In 2010, the price of steel began to recover. However, the recovery was driven more by increasing cost of material inputs, such as iron ore and coking coal, than broad demand recovery.

In 2011, core steel prices again fell considerably. At this time, China began to transition from a net electrical steel importer to a net electrical steel exporter.<sup>52</sup> Between 2005 and 2011, China imported an estimated 253,000 to 353,000 tonnes of electrical steel.

<sup>51</sup> International Trade Administration. *Global Steel Report*. (Last accessed September 1, 2022) <https://legacy.trade.gov/steel/pdfs/global-monitor-report-2018.pdf>.

<sup>52</sup> Capital Trade Incorporated, *Effective Trade Relief on Transformer Cores and Laminations*, 2020. Submitted as part of AK Steel comment at Docket No. BIS-2020-0015-0075 at p. 168.

During this time, China added significant domestic electrical steel production capacity, such that from 2016 to 2019 only about 22,000 tonnes were imported to China annually. China also exported nearly 200,000 tonnes of electric steel annually by the late 2010's.

Many of the exporters formerly serving China sought new markets around 2011, namely the United States. The rise in U.S. imports at this time hurt domestic U.S. steel manufacturers, such that in 2013, domestic U.S. steel stakeholders filed anti-dumping and countervailing duty petitions with the U.S. International Trade Commission.<sup>53</sup> The resulting investigation found that "an industry in the United States is neither materially injured nor threatened with material injury by reason of imports of grain-oriented electrical steel . . . to be sold in the United States at less than fair value."<sup>54</sup>

In the amorphous steel market, the necessary manufacturing technology has existed for many decades and has been used in distribution transformers since the late 1980s.<sup>55</sup> In many countries, amorphous steel is widely used in the cores of distribution transformers.<sup>56</sup> Significant amorphous steel use tends to occur (1) in places with both comparatively lower labor costs and significant electrification (*e.g.*, India, China); and (2) in regions with relatively high loss valuations on losses (*e.g.*, certain provinces of Canada).

Beginning in 2018, the U.S. government instituted a series of import duties on aluminum and steel articles, among other items. Steel and aluminum articles were generally subject to respective import duties of 25 and 10 percent *ad valorem*.<sup>57</sup> 83 FR 11619; 83 FR 11625. Since March 2018, several presidential proclamations have created or modified steel and aluminum tariffs, including changes to the products covered, countries subject to the tariffs, exclusions, *etc.*<sup>58</sup> Given the recency of several publications, combined with the

<sup>53</sup> U.S. International Trade Commission, *Grain-Oriented Electrical Steel from Germany, Japan, and Poland*, Investigation Nos. 731-TA-1233, 1234, and 1236. September 2014.

<sup>54</sup> *Id.*

<sup>55</sup> DeCristofaro, N., *Amorphous Metals in Electric Power Distribution Applications*, Material Research Society, MRS Bulletin, Volume 23, Number 5, 1998.

<sup>56</sup> BPA's Emerging Technologies Initiative, *Phase 1 report: High Efficiency Distribution Transformer Technology Assessment*, April 2020. Available online at: <https://www.bpa.gov/EE/NewsEvents/presentations/Documents/Transformer%20webinar%204-7-20%20Final.pdf>.

<sup>57</sup> *Ad valorem* tariffs are assessed in proportion to an item's monetary value.

<sup>58</sup> Congressional Research Service, *Section 232 Investigations: Overview and Issues for Congress*, May 18, 2021. Available online at: <https://fas.org/sgp/crs/misc/R45249.pdf>.

supply chain disruptions caused by the Covid-19 pandemic, many of the price effects that, directly or indirectly, impact the pricing of distribution transformers may still be stabilizing.

Another recent trend in distribution transformer manufacturing is an increase in rate of import or purchase of finished core products. The impact of electrical steel tariffs on manufacturers' costs varies widely depending on if manufacturers are purchasing raw electrical steel and paying a 25-percent tariff if the steel is imported, or if they are importing finished transformer cores which, along with distribution transformer core laminations and finished transformer imports, are not subject to the tariffs. Some stakeholders have argued that this trend toward importing distribution transformer cores, primarily from Mexico and Canada, is a method of circumventing tariffs, as electrical steel sold in the global market has been less expensive than domestic electrical steel on account of being unfairly traded.<sup>59</sup> <sup>60</sup> Conversely, other stakeholders have commented that this trend predated the electrical steel tariffs and that importation of transformer components is often necessary to remain competitive in the U.S. market, given the limited number of domestic manufacturers that produce transformer laminations and cores.<sup>61</sup> <sup>62</sup>

On May 19, 2020, the U.S. Department of Commerce (DOC) opened an investigation into the potential circumvention of tariffs via imports of finished distribution transformer cores and laminations. 85 FR 29926. On November 18, 2021, DOC published a summary of the results of their investigation in a notice to the **Federal Register**. The report stated that importation of both GOES laminations and finished wound and stacked cores has significantly increased in recent years, with importation of laminations increasing from \$15 million in 2015 to \$33 million in 2019, and importation of finished cores increasing from \$22 million in 2015 to \$167 million in 2019. DOC attributed these increases, at least in part, to the increased electrical steel costs resulting from the imposed tariffs on electrical steel. In response to their investigation, DOC stated it is exploring several options to shift the market towards domestic production and

<sup>59</sup> (AK Steel, Docket No. BIS-2020-0015-0075 at pp. 43-58).

<sup>60</sup> (American Iron and Steel Institute, Docket No. BIS-2020-0015-0033 at pp. 2-5).

<sup>61</sup> (Central Maloney Inc., Docket No. BIS-2020-0015-0015 at pp. 1).

<sup>62</sup> (NEMA, Docket No. BIS-2020-0015-0034 at pp. 3-4).

consumption of GOES, including extending tariffs to include laminations and finished cores. No trade action has been taken at the time of publication of this NOPR. 86 FR 64606.

More recently, DOE learned from stakeholders during manufacturer interviews and from public comments that pricing of electrical steel has risen such that in the current market, it is similar between domestic and foreign electrical steel (*i.e.*, the price of foreign electrical steel without any tariffs applied). (Powersmiths, No. 46 at p. 6; Carte, No. 54 at p. 3) These recent price increases, particularly in foreign produced electrical steel, were cited as being a result of both general supply chain complications and increased demand for non-oriented electrical steel (NOES) from electric motor applications. (NEMA, No. 50 at p. 9; Powersmiths, No. 46 at p. 5; Zarnowski, Public Meeting Transcript, No. 40 at p. 36; Looby, Public Meeting Transcript, No. 40 at p. 37)

Since 2016, there has been one domestic supplier and multiple global suppliers of GOES. The amorphous steel market follows the same pattern, with one domestic supplier and multiple global suppliers. Further, although the current foreign suppliers of amorphous steel are primarily based in Japan and China, DOE received feedback through public comment and manufacturer interviews that South Korean and German steel suppliers have the capabilities to expand their steel production to include amorphous steel, if demand for amorphous steel increases. (Metglas, No. 11 at p. 2) DOE does not have data suggesting that amorphous steel is inherently more expensive to produce than GOES. Both varieties rely on similar inputs and both are capital-intensive, therefore tending to reduce per-pound production costs with higher capacity utilizations.

Public comments by Metglas stated that within two years of developing the know-how to produce amorphous ribbon, producers in China were able to add 70,000 Mt of capacity.<sup>63</sup> Public statements from one manufacturer in Europe note that since the expiration of an initial patent related to amorphous steel production, there have been a number of additional amorphous suppliers and material prices have been stable.<sup>64</sup> Given these historical

examples with which manufacturers have been able to quickly add amorphous capacity, along with the cited number of producers capable of making amorphous steel, DOE's view is that it is reasonable to expect that if there were insufficient amorphous steel production capacity to meet amended energy conservation standards, some manufacturers with the expertise to produce amorphous steel would enter the market and manufacturers currently without the expertise to manufacture amorphous steel may invest in its development.

Additionally, during manufacturer interviews, stakeholders indicated that in the current marketplace there are shortages of GOES steel products, leading to greater price levels and volatility. Because GOES production can be shifted to NOES products at modest cost, these shortages are likely driven at least in part by rising demands for NOES in manufacture of motors and electric vehicles. This demand creates competition for GOES production capacity. Given recent trends of decarbonization initiatives and industrial reshoring, the manufacture of NOES for electric vehicle production appears poised to put competitive pressure on GOES production well into the future.<sup>65</sup>

Further, there has been, and remains, competition for available low-loss grades of GOES between the power and distribution transformer segments. Cliffs commented that while high-permeability GOES works well in distribution transformers, it has historically been sold as a laser DR product to the power transformer market; NEMA commented that both distribution and power transformers compete for steel demand. (Cliffs, No. 57 at p. 1; NEMA, No. 50 at p. 9) Therefore, it is likely that any energy savings associated with use of lower-loss core steel, whether it be amorphous or grain-oriented, would require investment from steel manufacturing industry at-large to increase capacity of either lower-loss GOES steels or of amorphous steel.

Rather than constructing sensitivity analysis scenarios to reflect every potential combination of factors that may affect steel pricing (*e.g.*, various tariffs and quotas, competition from NOES, decisions by steelmakers in various countries to add production capacity) or making assumptions

regarding how changes in production volume affect material prices, DOE relies on a 5-year average pricing for its core steel.

DOE requests comment on the current and future market pressures influencing the price of GOES. Specifically, DOE is interested in the barriers to and costs associated with converting a factory production line from GOES to NOES.

DOE further requests comment regarding how the prices of both GOES and amorphous are expected to change in the immediate and distant future.

DOE requests comment regarding the barriers to converting current M3 or 23hib90 electrical steel production to lower-loss GOES core steels.

DOE requests comment as to if there are markets for amorphous ribbon, similar to NOES competition from GOES production, which would put competitive pressures on the production of amorphous ribbon for distribution transformers.

DOE requests comment on how a potentially limited supply of transformer core steel, both of amorphous and GOES, may affect core steel price and availability. DOE seeks comment on any factors which uniquely affect specific steel grades (*e.g.*, amorphous, M-grades, hib, dr, pdr). Additionally, DOE seeks comment on how it should model a potentially concentrated domestic steel market in its analysis, resulting from a limited number of suppliers for the amorphous market or from competition with NOES for the GOES market, including any use of game theoretic modeling as appropriate.

#### b. Scrap Factor

In the August 2021 Preliminary Analysis TSD, DOE noted that it applies various scrap markups to distribution transformer bills of materials (August 2021 Preliminary Analysis TSD at p. 2–53). DOE requested comment on its scrap factor markups. Metglas commented that DOE should not apply a scrap to a finished core because the scrap would be included in the core costs. (Metglas, No. 53 at p. 5)

DOE notes that a scrap factor is still applied to prefabricated cores to account for any potential breakage of cores and any scrap associated with assembling the windings or insulation on the cores. However, a lesser factor is used as compared to GOES because much of the scrap costs would be priced into the core production.

Metglas commented that the scrap rate for GOES seemed low but did not provide an alternative value. (Metglas, No. 53 at p. 5) Eaton commented that it is unclear which mark-ups are applied

<sup>63</sup> Metglas, *Section 232 National Security Investigation of Imports of Steel: Comments by Metglas, Inc. Requesting the Inclusion of Amorphous Steel*, 2017. <https://www.bis.doc.gov/index.php/232-steel-public-comments/1835-metglas-amorphous-public-comment>.

<sup>64</sup> Wilson Power Solutions, *Amorphous Metal Transformers—Myth Buster*, 2018. [https://www.wilsonpowersolutions.co.uk/app/uploads/2017/05/WPS\\_AMT\\_Myth\\_Buster\\_2018-2.pdf](https://www.wilsonpowersolutions.co.uk/app/uploads/2017/05/WPS_AMT_Myth_Buster_2018-2.pdf).

<sup>65</sup> Example: California's electric vehicle adoption executive order: <https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-Climate.pdf>, 2022.

to which cores and DOE should clarify. (Eaton, No. 55 at p. 14)

DOE has maintained the scrap factors from the preliminary analysis as it did not receive alternative values and has updated the language in chapter 5 of the TSD to better explain how scrap factors were applied. DOE has added equations in chapter 5 to walk through how the material costs were translated to MSPs.

#### c. Other Material Costs

In the August 2021 Preliminary Analysis TSD, DOE presented material prices and requested comment on a variety of additional materials used in distribution transformer construction. (August 2021 Preliminary Analysis TSD at p. 2–50)

Eaton commented that while windings combs and epoxy resin have materials cost listed, they are not used in liquid immersed transformers. (Eaton, No. 55 at p. 14) DOE notes that it did not apply either of those costs to liquid-immersed distribution transformers and has made that more clear in the NOPR TSD.

Eaton commented that mineral oil and mild steel prices are higher than was shown in the August 2021 Preliminary Analysis TSD. (Eaton, No. 55 at p. 14) Eaton commented that DOE may be underestimating pricing, in part due to underestimating the number and costs of some of the fixed components, such as the number of bushings for RU4 and RU5. (Eaton, No. 55 at pp. 14–16) DOE has made modifications to the pricing of its fixed components and updated costs to reflect generally price changes in the underlying commodities. DOE notes that the fixed-costs generally do not vary with efficiency and as such, higher pricing of these fixed-components would not impact the pay-back periods for more efficient distribution transformers.

Specifically, regarding the cost of the distribution transformer tank, Eaton commented that the cost is too low and appears to have omitted the cost of the cabinet and associated labor. (Eaton, No. 55 at p. 15)

Part of the difference in tank costs cited by Eaton, is likely associated with the increase in tank steel that has occurred between when the preliminary analysis prices were gathered compared to the NOPR prices. DOE has updated tank steel prices, which has increased the price of the distribution transformer tank. DOE notes that weld time would generally be included in calculation of labor. DOE has added additional detail as to calculation of tank cost in chapter 5 of the TSD.

NEMA commented that radiators are not always included in footprint

calculations but cabinet/enclosures are and DOE should add these into the analysis. (NEMA, No. 50 at p. 14)

DOE has modeled a cabinet and enclosure in its sizing of distribution transformer tanks. DOE has presented these additional details in chapter 5 of the TSD.

#### d. Cost Mark-Ups

##### Factory Overhead

In the August 2021 Preliminary Analysis TSD, DOE noted that it used a factory overhead markup to account for all indirect costs associated with production, indirect materials and energy used, taxes, and insurance. (August 2021 Preliminary Analysis TSD at p. 2–57)

Eaton commented that it was unclear what exactly the factory overhead markup was applied to, for example, did it include only materials the consumer produced themselves or did it apply to purchased parts as well. (Eaton, No. 55 at p. 15)

DOE applied the factory overhead markup to all material costs, which would include purchased parts. DOE understands that purchased parts would still require factory space, certain equipment usage, taxes, and insurance. DOE has added detail in chapter 5 of the TSD as to how it applied the Factory Overhead Mark-up.

##### Labor

Labor costs are an important aspect of the cost of manufacturing a distribution transformer. In the August 2021 Preliminary Analysis TSD, DOE described how the number of labor hours were derived for each distribution transformer design. For liquid-immersed distribution transformers, DOE generally relied on a bottoms-up approach, estimating the various hours associated with the various steps in distribution transformer manufacturing. For dry-type distribution transformers, DOE relies on a top-down approach to estimate the total labor for a unit using equations derived from manufacturer data. These equations include a base labor charge for a given unit and a variable charge that varies with transformer size. DOE notes in the August 2021 Preliminary Analysis TSD, it mistakenly outlined a bottom-up approach for LVDTs when in fact a top-down labor estimate was used. This discussion is modified in chapter 5 of the TSD, while the estimated labor per unit is unchanged.

In response to the August 2021 Preliminary Analysis TSD, Eaton noted that the estimates of labor hours for RU4 and RU5 appeared to notably underestimate the required labor per

unit and noted many specific areas in the bottom-up approach that appeared to underestimate labor. (Eaton, No. 55 at p. 17–19) Eaton also noted that DOE overestimated the RU5 additional number of labor hours for building an amorphous distribution transformer and that the only difference would be that an amorphous transformer would have a split core assembly, which would require above 1 hour of additional labor. (Eaton, No. 55 at p. 20)

In manufacturer interviews, DOE received concurring feedback that while its estimates of labor per unit and bottoms-up approach were approximately accurate for its single-phase, liquid-immersed units, three-phase units require substantially more labor. DOE relied on manufacturer interviews and confidential data to develop estimates for labor hours for RU4 and RU5 that assumes a base labor number of hours and a variable that scales with unit size, similar to what is done for the dry-type distribution transformers. These equations are presented in chapter 5 of the TSD.

Eaton commented that it believes the fully burdened cost of labor is way too low and a value of \$200/hour or more seems more appropriate. (Eaton, No. 55 at p. 16)

DOE applies a labor cost per hour that is generally derived from the U.S. Bureau of Labor Statistic rates for North American Industry Classification System (“NAICS”) Code 335311—“Power, Distribution, and Specialty Transformer Manufacturing” production employee hourly rates and applied mark-ups for indirect production, overhead, fringe, assembly labor up-time, and a nonproduction mark-up to get a fully burdened cost of labor. In the preliminary analysis, DOE adjusted the labor rate upward in response to manufacturer feedback. While some manufacturers may have different labor costs, DOE generally considers the BLS statistics approximately representative. DOE has adjusted labor costs from the preliminary analysis based on the ratio of increased labor costs in NAICS code.

##### Shipping

In the August 2021 Preliminary Analysis TSD, DOE noted that it used a price per pound estimate to estimate the shipping cost of distribution transformers. DOE stated that while shipping costs will vary depending on several factors, including weight, volume, footprint, order size, destination, distance, and other, general shipping costs (fuel prices, driver wages, demand, etc.), the price-per-pound estimate is an appropriate approximation of shipping costs and

reflects that there would be increased shipping costs associated with larger distribution transformers. DOE then applied a non-production markup on top of its shipping costs. DOE requested comment on its methodology and the shipping costs used in the preliminary analysis. (August 2021 Preliminary Analysis TSD at p. 2–56)

Howard commented that they have their own shipping division and trucks and optimize shipments to be most efficient. (Howard, No. 59 at p. 3) Eaton commented that shipping costs vary but on average, DOE’s shipping cost estimates are reasonable. (Eaton, No. 55 at p. 16)

DOE did not receive any comment or data suggesting an alternative approach to shipping costs, therefore DOE has retained its price-per-pound mark-up to account for shipping in the NOPR analysis.

**Manufacturer Markup**

To account for the manufacturer’s nonproduction costs and profit margin, DOE applies a manufacturer markup to the MPC. The resulting MSP is the price at which the manufacturer distributes a unit into commerce. In the preliminary analysis, DOE applied a gross margin percentage of 20 percent for all distribution transformers.<sup>66</sup>

Eaton commented that its gross profit margin is higher and a 20 percent gross margin is too low for a publicly traded corporation with obligations to stakeholders.<sup>67</sup> (Eaton, No. 55 at p. 16–17)

DOE’s average gross margin was developed by examining the annual Securities and Exchange Commission (SEC) 10–K reports filed by publicly-traded manufacturers primarily engaged in distribution transformer manufacturing and whose combined product range includes distribution transformers.

While some corporations may have higher gross margins, the gross margin is unchanged from the April 2013 Standards Final Rule and was presented to manufacturers in confidential interviews as part of both the preliminary analysis and the NOPR analysis. While some manufacturers

noted higher or lower gross margins, depending on the product class, there was generally agreement that the 20 percent gross margin was appropriate for the industry. As such, DOE has retained the 20 percent gross margin as part of the NOPR analysis.

**4. Cost-Efficiency Results**

The results of the engineering analysis are reported as cost-efficiency data (or “curves”) in the form of energy efficiency (in percentage) versus MSP (in dollars), which form the basis for subsequent analyses in the preliminary analysis. DOE developed sixteen curves representing the sixteen representative units. DOE implemented design options by analyzing a variety of core steel material, winding material and core construction method for each representative unit and applying manufacturer selling prices to the output of the model for each design option combination. See TSD chapter 5 for additional detail on the engineering analysis.

Powersmiths commented that the cost-efficiency plots show it is too cheap to achieve higher efficiency and if it were really that cheap, the market would move there without legislation. (Powersmiths, No. 46 at p. 5)

Conversely, Metglas commented that the market does not evaluate based on efficiency and the only way to see efficiency improvements is via amended energy conservation standards. (Metglas, No. 53 at p. 8)

In general, DOE’s analysis assumes most distribution transformer customers purchase based on lowest first cost and there is limited market above minimum efficiency standards (see section IV.F.3.c). Therefore, DOE does not have data to support manufacturers will build above minimum efficiency standards, aside from certain select applications, even if it were only modestly more expensive.

The Efficiency Advocates commented that the percentage of transformers core steels purchased in the preliminary analysis shows that too few GOES transformers are being selected, indicating a potential issue in the

engineering analysis. (Efficiency Advocates, No. 52 at p. 7)

DOE has acknowledged that aside from lowest first cost, manufacturers may be limited in their steel choice under the base case. In certain cases, the incremental cost to higher efficiency standards may be low but assumes access to suppliers of better performing steel. DOE has updated its baseline analysis to reflect the steel choices that are currently made in the industry as described in section IV.F.3.a.

**D. Markups Analysis**

The markups analysis develops appropriate markups (e.g., retailer markups, distributor markups, contractor markups) in the distribution chain and sales taxes to convert the MSP estimates derived in the engineering analysis to consumer prices, which are then used in the LCC and PBP analysis. At each step in the distribution channel, companies mark up the price of the product to cover costs. DOE’s markup analysis assumes that the MSPs estimated in the engineering analysis (see section IV.C of this document) are occurring in a competitive distribution transformer market as discussed in section V.B.2.d of this document.

For distribution transformers, the main parties in the distribution chain differ depending on the type of distribution transformer being purchased and by whom.

Liquid-immersed distribution transformers are almost exclusively purchased and installed by electrical distribution companies, as such the distribution chained assumed by DOE reflect the different parties involved. Dry-type distribution transformers are used to step down voltages from primary service into the building to voltages used by different circuits within a building, such as, plug loads, lighting, and specialty equipment; as such DOE modelled that dry-type distribution transformers are purchased by non-residential customers, i.e., commercial, and industrial customers.

DOE considered the following distribution channel shown in Table IV.5.

**TABLE IV.5—DISTRIBUTION CHANNELS FOR DISTRIBUTION TRANSFORMERS**

Type	Consumer	Market share (%)	Distribution channel
Liquid-Immersed	Investor-owned utility .....	82	Manufacturer → Consumer.
	Publicly-owned utility .....	18	Manufacturer → Distributor → Consumer.
LVDT .....	All .....	100	Manufacturer → Distributor → Consumer.
	All .....	100	Manufacturer → Distributor → Electrical contractor → Consumer.

<sup>66</sup> The gross margin percentage of 20 percent is based on a manufacturer markup of 1.25.

<sup>67</sup> A 20 percent gross margin is equivalent to a 1.25 manufacturer markup.

TABLE IV.5—DISTRIBUTION CHANNELS FOR DISTRIBUTION TRANSFORMERS—Continued

Type	Consumer	Market share (%)	Distribution channel
MVDT .....	All .....	100	Manufacturer → Distributor → Electrical contractor→ Consumer.

Howard commented that in their experience that liquid-immersed distribution transformers are sold directly (more than 80%) to the utilities through our agents or manufacturing representatives. (Howard, No. 59 at p. 2) DOE notes that the distribution channels used in the preliminary analysis include a large fraction of sales as being direct to purchases by utilities that would encompass the circumstances described by Howard, as shown in Table IV.5.<sup>68</sup> For this analysis DOE maintained the distribution channels described in its preliminary analysis.

Chapter 6 of the NOPR TSD provides details on DOE’s development of markups for distribution transformers.

*E. Energy Use Analysis*

The energy use analysis produces energy use estimates and end-use load shapes for distribution transformers. The energy use analysis estimates the range of energy use of distribution transformers in the field (*i.e.*, as they are used by consumers) enabling evaluation of energy savings from the operation of distribution transformer equipment at various efficiency levels, while the end-use load characterization allows evaluation of the impact on monthly and peak demand for electricity. The energy use analysis provides the basis for other analyses DOE performed, particularly assessments of the energy savings and the savings in operating costs that could result from adoption of amended or new standards.

As presented in section IV.C transformers losses can be categorized as “no-load” or “load.” No-load losses are roughly constant with the load on the transformer and exist whenever the distribution transformer is energized (*i.e.*, connected to electrical power). Load losses, by contrast, are zero at when the transformer is unloaded, but grow quadratically with load on the transformer.

Because the application of distribution transformers varies significantly by type of distribution transformer (liquid-immersed or dry-type) and ownership (electric utilities own approximately 95 percent of liquid-

immersed distribution transformers; commercial/industrial entities use mainly dry type), DOE performed two separate end-use load analyses to evaluate distribution transformer efficiency. The analysis for liquid-immersed distribution transformers assumes that these are owned by utilities and uses hourly load and price data to estimate the energy, peak demand, and cost impacts of improved efficiency. For dry-type distribution transformers, the analysis assumes that these are owned by commercial and industrial (“C&I”) entities, so the energy and cost savings estimates are based on monthly building-level demand and energy consumption data and marginal electricity prices. In both cases, the energy and cost savings are estimated for individual distribution transformers and aggregated to the national level using weights derived from transformer shipments data.

1. Hourly Load Model

For utilities, the cost of serving the next increment of load varies as a function of the current load on the system. To appropriately estimate the cost impacts of improved distribution transformer efficiency in the Life-cycle Cost (LCC) analysis, it is therefore important to capture the correlation between electric system loads and operating costs and between individual distribution transformer loads and system loads. For this reason, DOE estimated hourly loads on individual liquid-immersed distribution transformers using a statistical model that simulates two relationships: (1) the relationship between system load and system marginal price; and (2) the relationship between the distribution transformer load and system load. Both are estimated at a regional level. Distribution transformer loading is an important factor in determining which types of distribution transformer designs will deliver a specified efficiency, and for calculating distribution transformer losses, and the time dependent values of those losses. To inform the hourly load model DOE examined the data made available through the IEEE Distribution Transformer Subcommittee Task Force.

a. Hourly Per-Unit Load (PUL)

GEUS commented that because of load diversity, individual distribution

transformer capacity (kVA) per home depends on the number of homes connected to the transformer. For example, GEUS will place a 15 kVA transformer for a single 1200 square foot home, but 8 of these homes can be served by a single 50 kVA transformer. GEUS further commented that to balance transformer core (no-load) losses and resistive (load) losses their design strategy is to serve as many homes as possible within a 300 feet radius of the transformer. This design reduces transformer core (no-load) losses by reducing the transformer kVA/home, thereby reducing the ratio of no-load to load losses on each transformer. (GEUS, No. 58 at p. 1) Howard commented that it is their understanding that in some rural areas, there are transformers that are very lightly loaded, and in other areas, some units are loaded much more than 50 percent (Howard, No. 59 at p. 3) NEMA commented that the in-situ PUL varies widely from region to region and customer to customer. (NEMA, No. 50 at p. 12)

The Advocates asserted that DOE’s estimation of PUL to be too high and that if DOE decides to maintain these PUL inputs at their current values, the Department should provide a sensitivity analysis that enables commenters to evaluate the effect of PUL assumptions on the overall energy savings and economic analysis. (Efficiency Advocates, No. 52 at p. 6) Additionally, they commented that they believe DOE may be overestimating initial PUL (*sic*) in the preliminary analysis; this may negatively affect higher EL designs that prioritize core loss reductions and they urged DOE to update its assumptions based on recently available data. (Efficiency Advocates, No. 52 at pp. 2, 5)

Metglas commented that it is not possible to derive transformer PUL just from the meter data. To get a transformer’s PUL, one must associate which meters are getting supplied from which transformer. Further Metglas commented that, the data has come from only 127 zip codes adjacent to each other. Metglas asserted that the sample is too small to draw conclusions at the National level, and suggested that DOE base their ruling on data submitted by Electric Utilities to the IEEE Transformer Committee which indicates

<sup>68</sup> See: Technical Support Document, chapter 2, page 2–58. <https://www.regulations.gov/document/EERE-2019-BT-STD-0018-0040>.

that the average PUL on transformers are in the 0.1–0.2 values. (Metglas, No. 53 at p. 7–8)

NEEA further noted that the per-unit bases for both the system and individual transformer loads in the joint histogram estimates are not related to the transformer per-unit loads using nameplate capacities as the basis. They claim that this means that the loading estimates obtained from the joint histograms cannot be directly applied to the cited transformer loss formula, since the latter assumes a per-unit loading on a capacity basis. (NEEA, No. 51 at p. 2–3)

In this NOPR, DOE applied the same approach it used in the August 2021 preliminary analysis where the hourly PUL is a function of both the transformer’s simulated load and initial peak load (IPL). Where:

$$PUL = \text{simulated load}_{\text{hourly}} \times IPL.$$

To capture the wide diversity in distribution transformer loading that is

observed in the field, DOE used a two-step approach. Transformer load data were used to develop a set of joint probability distribution functions (JPDF) which capture the relationship between individual transformer loads and the total system load.<sup>69</sup> The transformer loads were calculated as the sum load of all connected meters on a given transformer for each available hour of the year. Because the system load is the sum of the individual transformer loads, the value of the system load in a given hour conditions the probability of the transformer load taking on a particular value. To represent the full range of system load conditions in the U.S., DOE used FERC Form 714<sup>70</sup> data to compile separate system load PDFs for each census division. These system PDFs are combined with a selected transformer JPDF to generate a simulated load appropriate to that system. As the simulated transformer loads are scaled to a maximum of one, to calculate the losses, the load is multiplied by a

scaling factor selected from the distribution of Initial Peak Loads (IPL), and by the capacity of the representative unit being modeled. In the August 2021 preliminary analysis, DOE defined the IPL as a triangular distribution between 50 and 130 percent of a transformer’s capacity with a mean of 85 percent. This produces an hourly distribution of PUL values from which hourly load losses are determined. These distributions of loads capture the variability of distribution transformers load diversity, from very low to very high loads, that are seen in the field.

In response to the comments from the Advocates and Metglas, DOE revised the IPL assumptions in this NOPR to more closely align the resulting PUL with data made available through the IEEE Distribution Transformer Subcommittee Task Force. The revised mean PULs for liquid-immersed representative unit used in this NOPR are shown in Table IV.6.

TABLE IV.6—DISTRIBUTION OF PER-UNIT-LOAD FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS

Rep. unit	Mean simulated hourly load	Mean IPL	Mean PUL
1 .....	0.29	0.75	0.22
2 .....	0.27	0.75	0.20
3 .....	0.32	0.75	0.24
4 .....	0.26	0.75	0.20
5 .....	0.31	0.75	0.23

b. Joint Probability Distribution Function (JPDF)

NEEA commented that when processing the load data into JPDF of loads that observed hourly loads for both commercial and residential customers were scaled by corresponding annual maxima prior to being counted towards the joint histogram, so that the observations may be treated as if on a per-unit basis. This is inconsistent with the per-unit notion in power systems, but permissible in this context if so stated. However, the problem of bias applied to an entire set of observations for a given transformer or “system” by an abnormally large (or small) peak observation is not acknowledged and therefore not treated. (NEEA, No. 51 at p. 2). DOE notes that the transformer data were screened to remove outliers before being used to construct JPDFs; a small number of transformers in the database may none-the-less have quite large or quite small peak loads, but the

associated low probability leads to minimal impact on the energy loss calculations. The data will be reviewed again to ensure that outliers have been removed.

NEEA found issue with DOE’s terminology in the TSD, which stated that DOE applies the joint histogram as a measure of correlation; and this is not the typical interpretation of joint probability. NEEA further recommended that a covariance-based measure (e.g., correlation coefficient) is the appropriate class of metric in this case because the subject load processes will necessarily be related as a consequence of common influences, each of which is in turn a stochastic process. (NEEA, No. 51 at pp. 2–3) In response, DOE agrees with NEEA’s comment that the term “correlation” used in the TSD is not appropriate. The system load is the sum of the loads on individual transformers, so the system load and transformer loads are not independent random variables. The relationship between the

two, represented by the JPDF, is a conditional probability distribution. DOE attempts to document its analyses in plain language, and the term correlation was used simply to indicate that the relationship between the transformer and system loads is not random. For this NOPR DOE will continue to use the term correlation to describe the general relationship between transformer and system loads, using footnotes to provide technical precision as needed.

On the topic of industrial loads for liquid-immersed distribution transformers NEEA asserted that as describe in the TSD appendix 7A, that in the case of industrial customers, actual transformer load data were not available and would be problematic for the estimation of the subject joint histograms. (NEEA, No. 18 at p. 2) At the time of the August 2021 Preliminary Analysis TSD, DOE was unable to acquire the transformer loads from industrial customers. As discussed in

<sup>69</sup> See: Distribution Transformer Load Simulation Inputs, Technical Support Document, chapter 7.

<sup>70</sup> <https://www.ferc.gov/industries-data/electric/general-information/electric-industry-forms/form-no-714-annual-electric/data>.



TSD appendix 7A, DOE was able to include the hourly meter loads from industrial customers, which contain hourly variability in load factor, as proxies for transformer loads—which were included in its database of JPDFs.

DOE requests comment or data showing hourly transformer loads for industrial customers.

NEEA additionally requested that DOE rationalize the choice of bin resolution in the joint histogram estimates. (NEEA, No. 51 at p. 2) In the August 2021 Preliminary Analysis TSD, DOE applied the same methodology to the creation and population of JPDFs as it did in the April 2013 Standards Final Rule. For the April 2013 Standards Final Rule, DOE balanced the bin resolution to 10 bins to ensure that each bin contained sufficient data to be sampled during its Monte Carlo simulation (~2 percent of samples per bin), this was also balanced against the computational limits of performing this model within an Excel spreadsheet. For the August 2021 Preliminary Analysis TSD, DOE considered increasing the bin count, but after testing found that this did not significantly alter the resulting averages, as such DOE elected to maintain the approach that stakeholders were already familiar with. For this NOPR, DOE will maintain the 10 bins that were applied in the August 2021 Preliminary Analysis TSD.

## 2. Monthly Per-Unit Load (PUL)

Powersmiths commented that, in the context of low-voltage dry-type distribution transformers, it has consistently measured much lower typical loading levels, across most vertical markets, in the range of 15–25 percent of nameplate capacity, which is in line with the publication in 1999 with the Cadmus Group Study and supported frequently since then in industry and at previous rulemaking sessions. (Powersmiths, No. 46 at p. 1)

DOE received no further comments on the in-field PUL for dry-type distribution transformers. Since the comments from Powersmiths align with DOE's analysis which shows an average RMS PUL for dry-type transformers to be in 16–27 percent of nameplate capacity DOE did not make any changes to its dry-type load model for this NOPR.

## 3. Future Load Growth

In its August 2021 Preliminary Analysis TSD, DOE applied an annual load growth rate of 0.9 percent, based on *U.S. Energy Information Administration* (“EIA”), *Annual Energy Outlook* (“AEO”) 2021 projected purchased electricity: delivered electricity trend, to

liquid-immersed transformers, and zero percent for low- and medium-voltage dry-type transformers.<sup>71</sup> On the subject of future load growth DOE received comments from EEI, CDA, Howard, Efficiency Advocates, Metglas, and NEMA.

Both EEI and CDA commented that they believe that loads on individual liquid-immersed distribution transformers will increase over the equipment's lifetimes due to several factors. Both speculated that the increase in loads will be driven by evolving “mega trends” in the electric utility industry, specifically increased electric vehicle charging, and increased building electrification. (EEI No. 56 at p. 2; CDA No. 47 at p. 1) The CDA further commented that EEI has projected loading increases of 10–50 percent over the forecast period that will greatly change operating practices in the utilities. This suggests the increasing importance of transformer load losses as well as balance and minimization of total losses. (CDA, No. 47 at p. 2) Howard commented that we are at the threshold of having many electric vehicles (EV) that will require a lot of energy use through the transformer. How quickly this will happen, remains to be seen. (Howard, No. 59 at p. 3)

NEMA commented that while they could not state with certainty what the appropriate load growth rate would be, they disagreed with an assumption of zero percent load growth. (NEMA, No. 50 at p. 13)

The Advocates, and Metglas challenged DOE application of a 0.9 percent annual load growth for liquid-immersed distribution transformers. Both asserted that the assumption of load growth rate applied to liquid-immersed distribution transformers of 0.9 percent per year was not justified as the National growth in electric demand will be matched by increased distribution capacity. They asserted that the load growth rate assumed by DOE, the average increase in annual electricity sales from *AEO*, is not entirely driven by increased electrical load on existing liquid-immersed distribution transformers, but in fact driven by grid expansion. (Advocates, No. 52 at pp. 5–6; Metglas, No. 53 at pp. 1, 5–6)

Additionally, the Advocates commented that they believe utilities will plan conservatively by installing larger transformers capable of handling rare peak demand events. Citing as evidence the IEEE load data as

suggesting utilities are already doing this as the reported average peak loads were only 50 percent of nameplate capacity. Utility decisions for how they size transformers are unlikely to change for new and replacement transformer installations given the uncertainties around future electricity demand. (Efficiency Advocates, No. 52 at pp. 5–6) This notion was supported by NEMA who commented that as consumer demand (for electricity) increases due to the migration to all-electric homes and buildings, and it stands to reason that kVA sizes will increase over time as utilities upgrade capacity to serve these consumer demands. Likewise, investments in renewable energy generation will cause changes to transformer shipments, unit sizes and selections. (NEMA, No. 50 at p. 16)

As the August 2021 Preliminary Analysis TSD indicated, and by the comments received, there are many factors that potentially impact future distribution transformer load growth, and that these factors may be in opposition. At this time, many utilities, states, and municipalities are pursuing electric vehicle charging programs, it is unclear the extent to which increases in electricity demand for electric vehicle charging, or other state level decarbonization efforts will impact current distribution transformer sizing practices (for example, whether distribution utilities plan to upgrade their systems to increase the capacity of connected distribution transformers—thus maintaining current loads as a function of distribution transformer capacity; or if distribution utilities do not plan to upgrade their systems and will allow the loads on existing distribution transformers to rise). EEI, CDA, and Howard speculate that these initiatives will increase the intensive per-unit-load over time as a function of per unit of installed capacity. However, they did not provide any quantitative evidence that this is indeed happening on the distribution systems, or regions which are moving forward with decarbonization efforts. Further, the hypothesis that intensive load growth will be a factor in the future is not supported by the available future trends in *AEO2022*, as indicated by the purchased electricity trend as it represents the delivered electricity to the customer. The Advocates and Metglas asserted that the load growth rate 0.9 percent per year was too great, and that higher loads in response to decarbonization initiatives would be met with the extensive growth of the distribution system, *i.e.*, increasing the total capacity of the distribution system

<sup>71</sup> TSD chapter 2, p. 2–63, August 2021. <https://www.regulations.gov/document/EERE-2019-BT-STD-0018-0040>.

through larger distribution transformers, or greater shipments, or some combination of both. Again, neither the Advocates nor Metglas provided any data to support their position. For this NOPR, DOE finds that neither position provides enough evidence to change its assumptions from the August 2021 Preliminary Analysis TSD. For this NOPR, DOE updated its load growth assumption for liquid-immersed distribution transformers based on the change in average growth of *AEO2022: Purchased Electricity: Delivered Electricity* at 0.5 percent.<sup>72</sup>

To help inform DOE's prediction of future load growth trend, DOE seeks data on the following for regions where decarbonization efforts are ongoing. DOE seeks hourly PUL data at the level of the transformer bank for each of the past five years to establish an unambiguous relationship between transformer loads and decarbonization policy and inform if any intensive load growth is indeed occurring. Additionally, DOE seeks the average capacity of shipment into regions where decarbonization efforts are occurring over the same five-year period to inform the rate of any extensive load growth that may be occurring in response to these programs.

#### 4. Harmonic Content/Non-Linear Loads

Harmonic current refers to electrical power at alternating current frequencies greater than the fundamental frequency. Distribution transformers in service are commonly subject to (and must tolerate) harmonic current of a degree that varies by application.

Powersmiths commented that the effects of harmonic content on LVDT can create significant customer risk due to transformer overheating, particularly when the transformer is under heavy loads. This was primarily an issue when general purpose transformers are installed outside prescribed harmonic limits. (Powersmiths No. 18 at p. 3)

Additionally, Powersmiths asserted that because DOE does not account for harmonic content in its loading analysis that it misrepresents the impact of additional heat on losses. Powersmiths concluded that light loading means the harmonic-related heat does not typically threaten the transformer, but it is not an excuse to leave this hidden risk unsaid as the load on any given transformer could be taken to full capacity based on

its nameplate rating, and associated protection, at any time during its long life. (Powersmiths No. 18 at p. 3) NEEA requested that for the next energy conservation lookback that DOE include harmonic content in its analysis (NEEA No. 18 at p. 4)

In response to the commenters regarding the inclusion of harmonic content, DOE agrees with NEEA and that in addition to determining the necessary input to adequately model the impacts of harmonic content at the National level, DOE would also have to consider how changes in transformer design would affect the availability of designs and the impacts on efficiency. DOE further concurs with Powersmiths that, on average, distribution transformers are lightly loaded, as shown in its analysis (see section IV.E.2) and that harmonic heat would not typically be an issue and would likely have minimal impact on the transformers covered by this NOPR. For this NOPR DOE will not consider the impacts of harmonic content but may examine them at a future date.

DOE notes that the installation and commissioning of distribution transformers, either general purpose or specialty equipment, falls outside the Department's authority and would be under the purview of local building or fire codes and ordinances.

Chapter 7 of the NOPR TSD provides details on DOE's energy use analysis for distribution transformers.

#### F. Life-Cycle Cost and Payback Period Analysis

DOE conducted LCC and PBP analyses to evaluate the economic impacts on individual consumers of potential energy conservation standards for distribution transformers. The effect of new or amended energy conservation standards on individual consumers usually involves a reduction in operating cost and an increase in purchase cost. DOE used the following two metrics to measure consumer impacts:

□ The LCC is the total consumer expense of an appliance or product over the life of that product, consisting of total installed cost (manufacturer selling price, distribution chain markups, sales tax, and installation costs) plus operating costs (expenses for energy use, maintenance, and repair). To compute the operating costs, DOE discounts future operating costs to the time of purchase and sums them over the lifetime of the product.

□ The PBP is the estimated amount of time (in years) it takes consumers to recover the increased purchase cost (including installation) of a more-

efficient product through lower operating costs. DOE calculates the PBP by dividing the change in purchase cost at higher efficiency levels by the change in annual operating cost for the year that amended or new standards are assumed to take effect.

For any given efficiency level, DOE measures the change in LCC relative to the LCC in the no-new-standards case, which reflects the estimated efficiency distribution of distribution transformers in the absence of new or amended energy conservation standards. In contrast, the PBP for a given efficiency level is measured relative to the baseline product.

For each considered efficiency level in each product class, DOE calculated the LCC and PBP for a nationally representative set of electric distribution utilities, and commercial and industrial ("C&I") customers. As stated previously, DOE developed these customer samples from various sources, including utility data from the Federal Energy Regulatory Commission (FERC), Energy Information Agency (EIA); and C&I data from the Commercial Building Energy Consumption Survey (CBECS), and Manufacturing Energy Consumption Survey (MECS). For each sample, DOE determined the energy consumption, in terms of no-load and load losses for the distribution transformers and the appropriate electricity price. By developing a representative sample of consumer entities, the analysis captured the variability in energy consumption and energy prices associated with the use of distribution transformer.

Inputs to the calculation of total installed cost include the cost of the equipment—which includes MSPs, retailer and distributor markups, and sales taxes—and installation costs. Inputs to the calculation of operating expenses include annual energy consumption, electricity prices and price projections, repair and maintenance costs, equipment lifetimes, and discount rates. DOE created distributions of values for equipment lifetime, discount rates, and sales taxes, with probabilities attached to each value, to account for their uncertainty and variability.

The computer model DOE uses to calculate the LCC and PBP relies on a Monte Carlo simulation to incorporate uncertainty and variability into the analysis. The Monte Carlo simulations randomly sample input values from the probability distributions and distribution transformer samples. For this rulemaking, the Monte Carlo approach is implemented as a computer simulation. The model calculated the LCC and PBP for products at each

<sup>72</sup> [www.eia.gov/outlooks/aeo/data/browser/#/?id=2-AEO2022&region=1-0&cases=ref2022&start=2020&end=2050&f=A&linechart=ref2022-d011222a.152-2-AEO2022.1-0-ref2022-d011222a.104-2-AEO2022.1-0&map=ref2022-d011222a.4-2-AEO2022.1-0&ctype=linechart&sourcekey=0](http://www.eia.gov/outlooks/aeo/data/browser/#/?id=2-AEO2022&region=1-0&cases=ref2022&start=2020&end=2050&f=A&linechart=ref2022-d011222a.152-2-AEO2022.1-0-ref2022-d011222a.104-2-AEO2022.1-0&map=ref2022-d011222a.4-2-AEO2022.1-0&ctype=linechart&sourcekey=0)

efficiency level for 10,000 individual distribution transformer installations per simulation run. The analytical results include a distribution of 10,000 data points showing the range of LCC savings for a given efficiency level relative to the no-new-standards case efficiency distribution. In performing an iteration of the Monte Carlo simulation for a given consumer, product efficiency is as a function of the consumer choice model described in section IV.F.3 of this document. If the chosen equipment's efficiency is greater than or equal to the efficiency of the standard level under

consideration, the LCC and PBP calculation reveals that a consumer is not impacted by the standard level. By accounting for consumers who already purchase more-efficient products, DOE avoids overstating the potential benefits from increasing product efficiency. DOE calculated the LCC and PBP for all consumers of distribution transformers as if each were to purchase a new equipment in the expected year of required compliance with new or amended standards. Amended standards would apply to distribution transformers manufactured 3 years after

the date on which any new or amended standard is published. At this time, DOE estimates publication of a final rule in 2024. Therefore, for purposes of its analysis, DOE used 2027 as the first year of compliance with any amended standards for distribution transformers. Table IV.7 summarizes the approach and data DOE used to derive inputs to the LCC and PBP calculations. The subsections that follow provide further discussion. Details of the model, and of all the inputs to the LCC and PBP analyses, are contained in chapter 8 of the NOPR TSD and its appendices.

TABLE IV.7—SUMMARY OF INPUTS AND METHODS FOR THE LCC AND PBP ANALYSIS \*

Inputs	Source/method
Equipment Cost .....	Derived by multiplying MPCs by manufacturer and retailer markups and sales tax, as appropriate. Used historical data to derive a price scaling index to project product costs.
Installation Costs .....	Assumed no change with efficiency level.
Annual Energy Use .....	The total annual energy use multiplied by the hours per year. Average number of hours based on field data. <i>Variability:</i> Based on distribution transformer load data or customer load data.
Electricity Prices .....	<i>Hourly Prices:</i> Based on EIA's Form 861 data for 2015, scaled to 2021 using <i>AEO2022</i> . <i>Variability:</i> Regional variability is captured through individual price signals for each EMM region. <i>Monthly Prices:</i> Based on an analysis of EEL average bills, and electricity tariffs from 2019, scaled to 2021 using <i>AEO2022</i> . <i>Variability:</i> Regional variability is captured through individual price signals for each Census region.
Energy Price Trends .....	Based on <i>AEO2022</i> price projections.
Repair and Maintenance Costs .....	Assumed no change with efficiency level.
Product Lifetime .....	<i>Average:</i> 32 years, with a maximum of 60 years.
Discount Rates .....	Approach involves identifying all possible debt or asset classes that might be used to purchase the considered equipment or might be affected indirectly. Primary data source was the Federal Reserve Board's Survey of Consumer Finances.
Compliance Date .....	2027.

\* References for the data sources mentioned in this table are provided in the sections following the table or in chapter 8 of the NOPR TSD.

1. Equipment Cost

To calculate consumer product costs, DOE multiplied the MPCs developed in the engineering analysis by the markups described previously (along with sales taxes). DOE used different markups for baseline products and higher-efficiency products, because DOE applies an incremental markup to the increase in MSP associated with higher-efficiency products.

To forecast a price trend for this NOPR, DOE maintained the approach employed in the August 2021 Preliminary Analysis TSD, where it derived an inflation-adjusted index of the Producer Price Index ("PPI") for electric power and specialty transformer manufacturing from 1967 to 2019.<sup>73</sup> These data show a long-term decline from 1975 to 2003, and then increase since then. There is considerable uncertainty as to whether the recent trend has peaked, and would be followed by a return to the previous long-term declining trend, or whether

the recent trend represents the beginning of a long-term rising trend due to global demand for distribution transformers and rising commodity costs for key distribution transformer components. Given the uncertainty, DOE chose to use constant prices (2021 levels) for both its LCC and PBP analysis and the NIA. For the NIA, DOE also analyzed the sensitivity of results to alternative distribution transformer price forecasts.

DOE did not receive any comments regarding its determination of future equipment costs and did not make any changes for this NOPR.

2. Efficiency Levels

For this NOPR, DOE analyzed different efficiency levels, these are expressed as a function of loss reduction over the equipment baseline. For units greater than 2,500 kVA, there is not a current baseline efficiency level that must be met. Therefore, DOE established EL1 for these units as if they were aligning with the current energy

conservation standards efficiency vs kVA relationship, scaled to the larger kVA sizes. To calculate this, DOE scaled the maximum losses of the minimally compliant 2,500 kVA unit to the 3,750 kVA size using the equipment class specific scaling relationships in TSD appendix 5C. For example, a 2,500 kVA unit that meets current energy conservation standards is 99.53 percent efficient and has 5903 W of loss at 50 percent load. Using the 0.79 scaling relationship for three-phase liquid-immersed distribution transformers, described in appendix 5C, the losses of a 3,750 kVA unit would be 8131 W, corresponding to 99.57 percent efficient at 50 percent load.

EL2 through EL5 align with the same percentage reduction in loss as their respective EC but rather than being relative to a baseline level, efficiency levels were established relative to EL1 levels.

<sup>73</sup> For this NOPR DOE maintained its use of the two Produce Price Indexes published by the U.S.

Bureau of Labor Statistics for: Electric power and specialty transformer PPI (PCU335311335311), and

Power and distribution transformers PPI (PCU335311335311).

The rate of reduction is shown in Table IV.8, and the corresponding efficiency ratings in Table IV.9.

TABLE IV.8—EFFICIENCY LEVELS AS PERCENTAGE REDUCTION OF BASELINE LOSSES

Equipment type	EL				
	1	2	3	4	5 (max-tech)
Liquid-immersed:					
≤2,500 kVA .....	2.5	5	10	20	40
>2,500 kVA .....	*40	**5	**10	**20	**40
Low-voltage Dry-type:					
1φ .....	10	20	30	40	50
3φ .....	5	10	20	30	40
Medium-voltage Dry-type:					
<46 kV BIL .....	5	10	20	30	40
≥46 and <96 kV BIL, and ≤2,500 kVA .....	5	10	20	30	40
≥46 and <96 kV BIL, and >2,500 kVA .....	*43	**10	**20	**30	**40
≥96 kV BIL and ≤2,500 kVA .....	5	10	20	30	35
≥96 kV BIL and >2,500 kVA .....	*34	**10	**20	**30	**35

\* Equipment currently not subject to standards. Therefore, reduction in losses relative to least efficient product on market.  
 \*\* Reduction in losses relative to EL1.

TABLE IV.9—EFFICIENCY LEVELS

Rep. unit	kVA	Efficiency level					
		0	1	2	3	4	5
1 .....	50	99.11	99.13	99.15	99.20	99.29	99.46
2 .....	25	98.95	98.98	99.00	99.05	99.16	99.37
3 .....	500	99.49	99.50	99.52	99.54	99.59	99.69
4 .....	150	99.16	99.18	99.20	99.24	99.33	99.49
5 .....	1,500	99.48	99.49	99.51	99.53	99.58	99.69
6 .....	25	98.00	98.20	98.39	98.60	98.79	98.99
7 .....	75	98.60	98.67	98.74	98.88	99.02	99.16
8 .....	300	99.02	99.07	99.12	99.22	99.31	99.41
9 .....	300	98.93	98.98	99.04	99.14	99.25	99.36
10 .....	1,500	99.37	99.40	99.43	99.50	99.56	99.62
11 .....	300	98.81	98.87	98.93	99.05	99.16	99.28
12 .....	1,500	99.30	99.33	99.37	99.44	99.51	99.58
13 .....	300	98.69	98.75	98.82	98.95	99.08	99.14
14 .....	2,000	99.28	99.32	99.35	99.42	99.49	99.53
15 .....	112.5	99.11	99.13	99.15	99.20	99.29	99.46
16 .....	1,000	99.43	99.44	99.46	99.49	99.54	99.66
17 .....	3,750	n.a.	99.57	99.59	99.61	99.66	99.74
18 .....	3,750	n.a.	99.48	99.53	99.58	99.64	99.69
19 .....	3,750	n.a.	99.41	99.47	99.53	99.59	99.62

DOE did not receive any comment regarding the loss rates, nor the efficiency levels applied in the preliminary analysis, and continued their use for this NOPR.

DOE requests comments on its methodology for establishing the energy efficiency levels for distribution transformers greater than 2,500 kVA. DOE request comment on its assumed energy efficiency ratings.

3. Modeling Distribution Transformer Purchase Decision

In the August 2021 Preliminary Analysis TSD, DOE presented its assumption on how distribution transformers were purchased. DOE used

an approach that focuses on the selection criteria customers are known to use when purchasing distribution transformers. Those criteria include first costs, as well as the Total-Owning Cost (“TOC”) method. The TOC method combines first costs with the cost of losses. Purchasers of distribution transformers, especially in the utility sector, have historically used the TOC method to determine which distribution transformers to purchase. However, comments received from stakeholders responding to the 2012 ECS NOPR (77 FR 7323) and the June 2019 RFI (84 FR 28254) indicate that the widespread practice of concluding the final purchase of a distribution transformer

based on TOC is rare, instead customers have been purchasing the lowest first cost transformer design regardless of its loss performance.

The utility industry developed TOC evaluation as a tool to reflect the unique financial environment faced by each distribution transformer purchaser. To express variation in such factors as the cost of electric energy, and capacity and financing costs, the utility industry developed a range of evaluation factors: A and B values, to use in their calculations.<sup>74</sup> A and B are the

<sup>74</sup> In modeling the purchase decision for distribution transformers DOE developed a probabilistic model of A and B values based on

equivalent first costs of the no-load and load losses (in \$/watt), respectively.

In response to the August 2021 Preliminary Analysis TSD, DOE received the following comments regarding the modeling of distribution transformer purchases.

a. Basecase Equipment Selection

Regarding how engineering designs were selected by the consumer choice model in the LCC, DOE received comments from Metglas and the Efficiency Advocates. Metglas commented that it did not agree with the DOE purchase decision model. Stating that the fraction of designs using amorphous steel as a core material were grossly overstated in the standards, and no-new standards cases. Metglas further

stated that currently the fraction of amorphous core distribution transformers is on the order of 2–3 percent of the market and that this fraction has been constant for the past 7 years. (Metglas, No. 53 at pp. 1–2) Additionally, the Efficiency Advocates recommended that DOE take “a hard look at” the purchasing behaviors of distribution transformers in the current marketplace. (Efficiency Advocates, No. 40 at p. 83)

In response to these comments DOE examined its responses received during manufacturer interviews. From these responses, DOE understands that in the current market that amorphous core distribution transformers (both liquid-immersed and dry-type) are shipped in

limited quantities, supporting Metglas’ claim. The reason for this is believed to be limitations in amorphous core fabricating capacity among manufacturers. DOE’s research indicates that distribution transformers can be fabricated with amorphous core steels that are cost competitive with conventional steels as shown in the engineering analysis (see section IV.C), but they cannot currently be fabricated in the quantities needed to meet the large order requirement of electric utilities, and as such, are limited to niche products. Accordingly, DOE has updated its customer choice model and, in the no-new standards case has limited type of core steel materials to the ratios shown in Table IV.10.

TABLE IV.10—CORE MATERIAL LIMITS IN THE NO-NEW STANDARDS CASE

<p><i>Baseline Steel for Liquid-Immersed:</i></p> <ul style="list-style-type: none"> <li>• 87% M3 or 23hib090.</li> <li>• 3% Amorphous (mostly in TOC applications above standards).</li> <li>• 10% 23PDR085.</li> </ul>	<p><i>Baseline Steel for Dry-Type:</i></p> <ul style="list-style-type: none"> <li>• 97% M4 or hib-M4 (M3 as modeled).</li> <li>• 3% PDR.</li> <li>• 0% AM.</li> </ul>
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Based on interviews with manufactures, and supporting research, DOE finds that there are no global supply constraints of amorphous ribbon for fabrication into transformer cores. And in the potential new-standards case, DOE does not limit the selection of the designs in the engineering database by core material type. Further, DOE understands that there are current production limitations for turning amorphous ribbons into transformer cores that would require the capital investment in ribbon cutting, and core stacking machines at higher intensities to meet the quantity requirements placed on manufacturers by electric utilities. The impacts of the additional capital investment on manufacturers in the potential new-standards case are captured in manufacturer impact analysis described in section IV.J of this document.

b. Total Owning Cost (“TOC”) and Evaluators

In the August 2021 Preliminary Analysis TSD, DOE used TOC evaluation rates as follows: 10 percent of liquid-immersed transformer purchases were concluded using TOC, and 0 percent of low-voltage dry-type and medium-voltage dry-type transformer purchases were concluded using TOC. DOE received comment

from several stakeholders regarding the rates at which TOC are practiced.

NEMA commented that the experience among their members varies, but in NEMA’s experience the percentage of TOC use in purchasing decisions for three-phase designs is higher than 10 percent: varying between 15–20 percent, and for single-phase designs, they believe the use of TOC in purchasing decisions is closer to 40 percent. (NEMA, No. 50 at p. 13) Additionally, NEMA responded to DOE’s request for information relating customer application of TOC as a function of distribution transformer capacity. NEMA responded that NEMA did not have detailed information on breakouts of TOC purchasing influence by kVA and that their members are investigating whether their customer information can be analyzed for useful insight on this subject (NEMA, No. 50 at pp. 13–14) Metglas commented that few transformer purchasers are using TOC evaluations, and 10 percent may be a reasonable estimate for those still using TOC. And in their experience the few remaining TOC evaluators reveal that they will abandon TOC as soon as their existing tenders are delivered.; leading to speculation that this practice could be nearly extinct within the next 2–3 years. (Metglas, No. 53 at p. 6)

DOE estimated the rate of consumers using TOC as a tool to inform the purchase of a distribution transformer to be 10 percent for liquid-immersed distribution transformers. These rates were established in response to stakeholder comments in the February 2012 NOPR (77 FR 7323) to which DOE received no adverse comments. Further, these rates were again put forward for comment in the June 2019 RFI (84 FR 28254) to which DOE did not receive any adverse comments.<sup>75</sup> In light of this long history of established low rates of TOC adoption for the purchase of distribution transformers DOE finds the comments received from NEMA to be inconsistent with historical comments from a wide range of stakeholders. *Ibid.* For this NOPR, DOE is maintaining the same rates of TOC evaluators established in the August 2021 ECS Preliminary Analysis TSD, however, DOE recognizes that circumstances change over time and has included in this NOPR a LCC sensitivity case with evaluation rates suggested by NEMA. The result of this sensitivity analysis can be found in appendix 8G of the TSD.

Powersmiths commented that it is not true that 100 percent of LVDT distribution transformers are purchased on minimum first cost, adding that their market is selling only distribution

utility requests for quotations when purchasing distribution transformers. In the context of the LCC the A and B model estimates the likely values that

a utility might use when making a purchase decision.

<sup>75</sup> Please see the summary of comments regarding the rate of evaluators in the August 2021 ECS

Preliminary Analysis, Technical Support Document, p 2–69; <https://www.regulations.gov/document/EERE-2019-BT-STD-0018-0023>.

transformers that significantly exceed minimum efficiency standards and the NEMA Premium transformer market existed prior to the 2016 energy conservation standards. (Powersmiths, No. 46 at pp. 3–4) Powersmiths commented that minimum efficiency is rarely the optimal choice for consumers and there is value in both new construction and retrofits that exceed energy conservation standards.

(Powersmiths, No. 46 at p. 4) Powersmiths added that trends toward green buildings have increased the number of consumers looking at value beyond first cost which may increase the value-added LVDT market. (Powersmiths, No. 46 at p. 4)

DOE recognizes that distribution transformers are purchased at different efficiency levels depending on the specific demands of consumers. For this analysis DOE did not receive a specific fraction of LVDT distribution transformers that were sold above the current standard, in the absence of such information DOE relied on the consumer choice model to determine the equipment price in addition to the fraction of equipment sold with higher performance cores constructed from PDR steel, as discussed in section IV.F.3.a of this document.

#### Band of Equivalentents (“BOE”)

In the August 2021 Preliminary Analysis TSD, DOE proposed the following definition for Band of Equivalentents (“BOE”): as a method to establish equivalency between a set of transformer designs within a range of similar TOC. BOE is defined as those transformer designs within a range of similar TOCs; the range of TOC varies from utility to utility and is expressed in percentage terms. In practice, the purchaser would consider the TOC of the transformer designs within the BOE and would select the lowest first-cost design from this set.

NEMA agreed with the Department’s assumptions with respect to their reflection of industry experiences and practices. NEMA further stated that its members are investigating whether their customer information can be analyzed for useful insight on this subject. (NEMA, No. 50 at p. 13) Metglas comment that BOE within a TOC calculation is often used because the assumptions within the TOC calculations are estimates. BOE can be up to 10 percent of TOC, meaning the TOC evaluations within this band are treated as equal, and when used in lieu of TOC, the fraction of consumers who evaluate using TOC drops to less than 5 percent. (Metglas, No. 53 at p. 7)

Based on the comments received DOE will maintain the definition previously stated. However, for this NOPR, DOE did not receive enough information or data to apply BOE to a fraction of transformer purchasers.

#### Evaluation Rates and High Electricity Costs

In the August 2021 ECS Preliminary Analysis TSD, DOE requested comment on whether those consumers that purchase distribution transformers based on TOC are likely to pay higher electricity costs. Howard commented that certain utilities with high electricity costs use the TOC (Total Owning Cost) approach to minimize their overall owning costs. And the manufacturer will work with the user to determine the best overall value to buy, and that this is good approach in those areas. (Howard, No. 59 at p. 3) NEMA commented that it stands to reason that consumers with higher electricity costs are more likely to consider TOC in purchasing decisions. (NEMA, No. 50 at p. 13–14)

The comments DOE received on this subject were supportive of the notion that consumers who have higher electricity costs would reasonably have higher adoption of using TOC as a purchasing tool. However, the comments did not provide any information, or data to support including this relationship in this NOPR. To relate higher electricity costs with increased TOC use, DOE would require from stakeholders the fraction of transformers specified and shipped to regions of higher electricity costs using TOC or BOE.

DOE requests comment on its assumed TOC adoption rate of 10 percent. Specifically, DOE requests comment on the TOC rate suggested by NEMA, that between 15 and 20 percent of 3-phase liquid-immersed distribution transformers are purchased using TOC, and that 40 percent of 1-phase liquid-immersed distribution transformers are purchased using TOC. DOE notes, that it is seeking data related to concluded sales based on lowest TOC in the strictest sense, excluding those transformers sold using band of equivalentents (see the section on band of equivalentents, above)

DOE requests comment on the fraction of distribution transformers purchased by customers using the BOE methodology. DOE notes, that it is seeking data related to concluded sales based on lowest BOE in the strictest sense, excluding those transformers sold using total owning costs.

DOE request comment if the rates of TOC or BOE vary by transformer

capacity or number of phases. Further, DOE seeks the fraction of distribution transformer sales using either method into the different regions in order to capture the believed relationship between higher electricity costs and purchase evaluation behavior.

#### c. Non-evaluators and First Cost Purchases

DOE defined those consumers who do not purchase based on TOC as those who purchase based on lowest first costs. NEMA commented that they disagreed with DOE’s assumption that purchasers who do not purchase based on TOC purchase strictly on a first cost basis. Stating, in relation to dry-type distribution transformers, that customers also care about production times, availability, perceived quality, design options and other factors relating to timing and performance. Further, in relation to liquid-immersed transformers, improved tank steel (stainless) or biodegradable immersion oil are potential upgrades outside electrical performance which NEMA members have had requested by customers. (NEMA, No. 50 at pp. 13–14)

DOE acknowledges that customers of distribution transformers will specify design aspects, or other criteria that will impact the cost of a transformer when making a purchasing decision that is not related to distribution transformer efficiency. As mentioned by NEMA in their comment, customers may have additional criteria when purchasing a distribution transformer that would be considered either an equipment upgrade outside of the equipment’s electrical performance, or operational considerations that would affect the first costs. The analysis conducted by the Department in support of its energy saving mission are limited to design aspects that affect the quantification of increased energy efficiency of the equipment in question, in this case, distribution transformers. These design aspects are defined in the current test procedure and quantified in the engineering analysis. Since the aspects listed by NEMA are outside of the electrical, and efficiency performance of distribution transformers, therefore they are not considered in this analysis.

#### 4. Installation Costs

Installation cost includes labor, overhead, and any miscellaneous materials and parts needed to install the product. DOE used data from RSMean to estimate the baseline installation cost

for distribution transformers.<sup>76</sup> In the August 2021 Preliminary Analysis TSD, DOE asserted that there would be no difference in installation costs between baseline and more efficient equipment. DOE also asserted that 5 percent of replacement installations would face increased costs over baseline equipment due to the need for site modifications.

DOE received comments from GEUS, Carte, and NEMA of the subject of installing distribution transformers.

GEUS expressed concern that higher standards may increase transformer weights such that 50 kVA transformers can no longer be handled with standard bucket trucks and would require a larger truck to preform installations. (GEUS, No. 58 at p. 1)

The load bearing capacity of vehicles classified as a bucket truck typically accommodate a wide range of lifting capacity depending on each individual truck. The analysis conducted for this NOPR shows a maximum of weight for a 50 kVA pole mounted liquid-immersed distribution of 1440 lbs. at the maximum technology case. Without knowing the specifics regarding the equipment used by GEUS, DOE cannot definitively say whether their existing bucket trucks will be sufficient.

Transformers are typically installed using a bucket truck, or crane truck. DOE requests comment on the typical maximum lifting capacity, and the typical transformer capacity being installed.

Additionally, Carte and NEMA expressed concern over the increasing of distribution transformer size in order to meet a potential revised standard. Carte commented that utilities are concerned with the increase in size and weight associated with efficiency standards, with potential issues for pole replacement, concrete load limits, and vaults. (Carte, No. 54 at p. 2–3) NEMA commented that when designing a new transformer to fit an existing pad footprint, the only way to add more active material to raise efficiency is to increase the height of the unit. This may not be feasible in situations where cables run underground. There may not be sufficient length remaining in those cables to reach a higher set of bushings to connect the unit to the network. (NEMA, No. 50 at p. 14)

As in the August 2021 Preliminary Analysis TSD, DOE acknowledges that there may be issues when installing a replacement distribution transformer on an existing pad, or underground enclosure. However, as discussed in

appendix 7D of the August 2021 Preliminary Analysis TSD, many of these issues can be avoided through proper equipment specification at the time of purchase. The issues that both Carte and NEMA reference, apart from vault replacement/renovation, can be addressed during purchasing with proper specifications. Given that no new information has been put forward in response to the August 2021 Preliminary Analysis TSD, DOE will maintain its assumptions and approach where increased installation costs over the no-new standards case are considered atypical and applied at a rate of 5 percent of installations occurrences.

For this NOPR, DOE reiterates its request for the following information. DOE requests data and feedback on the size limitations of pad-mounted distribution transformers. Specifically, what sizes, voltages, or other features are currently unable to fit on current pads, and the dimension of these pads. DOE seeks data on the typical concrete pad dimensions for 50 and 500 kVA single-; and 500, and 1500 kVA three-phase distribution transformers. DOE seeks data on the typical service lifetimes of supporting concrete pads.

#### 5. Annual Energy Consumption

For each sampled customer, DOE determined the energy consumption for a distribution transformer at different efficiency levels using the approach described previously in section IV.E of this document.

#### 6. Electricity Prices

DOE derived average and marginal electricity prices for distribution transformers using two different methodologies to reflect the differences in how the electricity is paid for by consumers of distribution transformers. For liquid-immersed distribution transformers, which are largely owned and operated by electric distribution companies, who purchase electricity from a variety of markets, DOE developed an hourly electricity costs model. For low- and medium-voltage dry-type, which are primarily owned and operated by C&I entities, DOE developed a monthly electricity cost model.

##### a. Hourly Electricity Costs

To evaluate the electricity costs associated with liquid-immersed distribution transformers, DOE used marginal electricity prices. Marginal prices are those utilities pay for the last kilowatt-hour of electricity produced that may be higher or lower than the average price, depending on the relationships among capacity,

generation, transmission, and distribution costs. The general structure of the hourly marginal cost methodology divides the costs of electricity into capacity components and energy cost components. For each component, the economic value for both no-load losses and load losses is estimated. The capacity components include generation and transmission capacity; they also include a reserve margin for ensuring system reliability, with factors that account for system losses. Energy cost components include a marginal cost of supply that varies by the hour.

The marginal costs methodology was developed for each regional Balancing Authority listed in EIA's Form EIA-861 database (based on "Annual Electric Power Industry Report").<sup>77</sup> To calculate the hourly price of electricity, DOE used the day-ahead market clearing price for regions having wholesale electricity markets, and system lambda values for all other regions. System lambda values, which are roughly equal to the operating cost of the next unit in line for dispatch, are filed by control area operators under FERC Form 714.<sup>78</sup>

EEI commented that the utilization of 2015 data and "scaling it" to the year of analysis was misguided given the clean energy progress the electric sector has made in the intervening years. The mix of resources used to generate electricity in the United States has changed dramatically over the last decade and is increasingly cleaner. EEI commented that, starting in 2016, natural gas surpassed coal as the main source of electricity generation in the United States, and in 2020 natural gas-based generation powered 40 percent of the country's electricity, compared to coal-based generation at 19 percent.

In response to EEI, DOE notes that it scaled the cost of electricity from 2015 to the present using AEO2022 electricity price trend, and that this trend accounts for changes in the electricity supply mix over this period.<sup>79</sup> Additionally, DOE captures the advances in reducing GHG and other pollutants from the Nation's electricity generators in its Emissions

<sup>77</sup> Available at <https://www.eia.doe.gov/cneaf/electricity/page/eia861.html>.

<sup>78</sup> <https://www.ferc.gov/industries-data/electric/general-information/electric-industry-forms/form-no-714-annual-electric/overview>.

<sup>79</sup> U.S. Energy Information Administration, Annual Energy Outlook 2022, Table 3. Energy Prices by Sector and Source Case: AEO2022 Reference case | Region: United States, 2022 (Available at: <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=3-AEO2022&region=1-0&cases=ref2022&start=2020&end=2050&f=A&linechart=ref2022-d011222a.3-3-AEO2022.1-0-ref2022-d011222a.55-3-AEO2022.1-0&map=ref2022-d011222a.4-3-AEO2022.1-0&ctype=linechart&sourcekey=0>, Last access: June 1, 2022).

<sup>76</sup> Gordian, RSMean Online, <https://www.rsmean.com/products/online> (Last accessed: March 2022).

Analysis, described in section IV.K. This analysis captures both shift in generation, and the reduction in coal-based generation, and resulting emissions referenced by EEI, from 2027 through the end of this this NOPR's analysis period.

DOE received no further comment regarding its electricity costs analysis and maintained the approach used in the August 2021 Preliminary Analysis TSD for this NOPR.

#### 7. Maintenance and Repair Costs

Repair costs are associated with repairing or replacing product components that have failed in an appliance; maintenance costs are associated with maintaining the operation of the product. Typically, small incremental increases in product efficiency produce no, or only minor, changes in repair and maintenance costs compared to baseline efficiency products. In the August 2021 Preliminary Analysis TSD, DOE asserted that maintenance and repair costs do not increase with transformer efficiency. NEMA responded that they agree with these assumptions. (NEMA, No. 50 at p. 16)

Based on this response DOE continued its assumptions that maintenance and repair costs do not increase with transformer efficiency for this NOPR analysis.

#### 8. Equipment Lifetime

For distribution transformers, DOE used a distribution of lifetimes, with an estimated average of 32 years and maximum 60 years.

NEMA commented that they have no alternative lifetimes to suggest, and the equipment lifetimes are suitably

representative. (NEMA, No. 50 at p. 16) However, NEMA postulated that, logically, increased (equipment) prices will create pressure on some customers to rebuild existing property. NEMA did not provide the additional service life that would be extended to rebuild equipment in this event, or to what extent the average service lifetime of a distribution transformer would increase. As the average lifetime presented in the August 2021 Preliminary Analysis TSD, at 32 years, is quite long, for this NOPR, DOE maintained the lifetime estimates presented in the August 2021 Preliminary Analysis TSD.

DOE request the average extension of distribution transformer service life that can be achieved through rebuilding. Additionally, DOE requests comment on the fraction of transformer that are repaired by their original purchasing entity and returned to service, thereby extending the transformer's service lifetime beyond the estimated lifetimes of 32 years with a maximum of 60 years.

#### 9. Discount Rates

The discount rate is the rate at which future expenditures are discounted to estimate their present value. DOE employs a two-step approach in calculating discount rates for analyzing customer economic impacts (e.g., LCC). The first step is to assume that the actual cost of capital approximates the appropriate customer discount rate. The second step is to use the capital asset pricing model (CAPM) to calculate the equity capital component of the customer discount rate. For this NOPR, DOE estimated a statistical distribution of commercial customer discount rates that varied by distribution transformer type, by calculating the cost of capital

for the different types of distribution transformer owners.

DOE's method views the purchase of a higher efficiency appliance as an investment that yields a stream of energy cost savings. DOE derived the discount rates for the LCC analysis by estimating the cost of capital for companies or public entities that purchase distribution transformers. For private firms, the weighted average cost of capital (WACC) is commonly used to estimate the present value of cash flows to be derived from a typical company project or investment. Most companies use both debt and equity capital to fund investments, so their cost of capital is the weighted average of the cost to the firm of equity and debt financing, as estimated from financial data for publicly traded firms in the sectors that purchase distribution transformers.<sup>80</sup> As discount rates can differ across industries, DOE estimates separate discount rate distributions for a number of aggregate sectors with which elements of the LCC building sample can be associated.

EEI commented that DOE should utilize up to date information to apply an appropriate discount rate for electric companies. (EEI, No. 56 at p. 4) DOE understands that this comment is in reference to DOE applying the Federal Government discount rate to local Municipal Utilities (MUNIs) consumers in the LCC analysis in the August 2021 Preliminary Analysis TSD. This was in error and has been corrected in this NOPR; consumer impacts for MUNIs are now calculated using the distribution of state/local government discount rates shown in Table IV.11. The mean WACC for this distribution is 2.67 percent.<sup>81</sup>

TABLE IV.11—APPLIED DISCOUNT RATES FOR PUBLICLY OWNED UTILITIES

Rate bin	Rates (%)	Weight (%)	Observations (quarters)
<0% .....	-1.9	3.0	4
0-1% .....	0.9	2.3	3
1-2% .....	1.6	23.3	31
2-3% .....	2.5	25.6	34
3-4% .....	3.5	35.3	47
4-5% .....	4.2	10.5	14

DOE received no further comments on its discount rate analysis and maintained its approach for this NOPR. See chapter 8 of the NOPR TSD for

further details on the development of consumer discount rates.

#### 10. Energy Efficiency Distribution in the No-New-Standards Case

To accurately estimate the share of consumers that would be affected by a

<sup>80</sup> Previously, Damodaran Online provided firm-level data, but now only industry-level data is available, as compiled from individual firm data, for the period of 1998–2018. The data sets note the number of firms included in the industry average for each year.

<sup>81</sup> Sources: For values through Q2 2016, Federal Reserve Bank of Saint Louis, "State and Local Bonds—Bond Buyer Go 20-Bond Municipal Bond Index—Discontinued Series," <https://fred.stlouisfed.org/series/WSLB20> (Last accessed February 2022). For Q3 2016 through 2021, Bartel

Associates LLC, "20 Year AA Municipal Bond Quarterly Rates," updated January 5, 2022, <https://bartel-associates.com/resources/select-gasb-67-68-discount-rate-indices> (Last accessed February 2022).



potential energy conservation standard at a particular efficiency level, DOE's LCC analysis considered the projected distribution (market shares) of product efficiencies under the no-new-standards case (*i.e.*, the case without amended or new energy conservation standards). To determine an appropriate basecase against which to compare various potential standard levels, DOE used the purchase-decision model described in section IV.F.3, where distribution transformers are purchased based on either lowest first cost, or, on lowest

TOC. In the no-new-standards case distribution transformers are chosen from among the entire range of available distribution transformer designs for each representative unit simulated in the engineering analysis based on this purchase-decision model. This selection is constrained only by purchase-price in the majority of cases (90 percent, and 100 percent for liquid-immersed, and all dry-type transformers, respectively), and reflect the MSPs of the available designs determined in the engineering analysis in section IV.C.1 of this document. The

resulting distribution of transformer efficiency in the No-New-Standards Case is shown in Table IV.12.

Comments received regarding the energy efficiency distribution in the no-new-standards case are addressed in the discussion regarding the modeling of distribution transformer purchase decisions, in section IV.F.2 of this document.

See chapter 8 of the NOPR TSD for further information on the derivation of the efficiency distributions.

TABLE IV.12—APPLIED DISTRIBUTION OF EQUIPMENT EFFICIENCIES IN THE NO-NEW STANDARDS CASE, FRACTION OF UNITS AT EACH EL (%)

EC	Rep unit	Efficiency level					
		0	1	2	3	4	5
1	1	90.6	6.1	0.3	0.9	1.6	0.4
1	2	99.1	0.3	0.4	0.1	0.0	0.0
1	3	96.5	1.0	2.2	0.1	0.2	0.1
2	4	65.0	30.7	1.2	0.1	2.1	0.9
2	5	93.5	4.2	1.7	0.6	0.0	0.0
2	17	97.7	0.2	0.3	0.8	0.8	0.2
12	15	64.8	31.4	0.8	0.0	2.1	0.9
12	16	93.9	3.9	1.6	0.4	0.0	0.0
3	6	31.4	46.4	21.3	0.9	0.0	0.0
4	7	83.4	15.1	1.5	0.0	0.0	0.0
4	8	49.0	45.1	6.0	0.0	0.0	0.0
6	9	28.0	50.0	22.0	0.0	0.0	0.0
6	10	87.5	12.5	0.0	0.0	0.0	0.0
8	11	76.2	23.8	0.0	0.0	0.0	0.0
8	12	90.6	9.4	0.0	0.0	0.0	0.0
8	18	100.0	0.0	0.0	0.0	0.0	0.0
10	13	90.4	9.7	0.0	0.0	0.0	0.0
10	14	100.0	0.0	0.0	0.0	0.0	0.0
10	19	100.0	0.0	0.0	0.0	0.0	0.0

Note: may not sum to 100 due to rounding.

11. Payback Period Analysis

The payback period is the amount of time it takes the consumer to recover the additional installed cost of more-efficient products, compared to baseline products, through energy cost savings. Payback periods are expressed in years. Payback periods that exceed the life of the product mean that the increased total installed cost is not recovered in reduced operating expenses.

The inputs to the PBP calculation for each efficiency level are the change in total installed cost of the product and the change in the first-year annual operating expenditures relative to the baseline. The PBP calculation uses the same inputs as the LCC analysis, except that discount rates are not needed.

As noted previously, EPCA establishes a rebuttable presumption that a standard is economically justified if the Secretary finds that the additional cost to the consumer of purchasing a product complying with an energy conservation standard level will be less

than three times the value of the first year's energy savings resulting from the standard, as calculated under the applicable test procedure. (42 U.S.C. 6295(o)(2)(B)(iii)) For each considered efficiency level, DOE determined the value of the first year's energy savings by calculating the energy savings in accordance with the applicable DOE test procedure, and multiplying those savings by the average energy price projection for the year in which compliance with the amended standards would be required. The results of this analysis provide an important element of DOE's evaluation of the economic justification for a potential standard level (thereby supporting or rebutting the results of any preliminary determination of economic justification). The rebuttable presumption payback calculation is discussed in section V.B.1.c of this document.

G. Shipments Analysis

DOE uses projections of annual product shipments to calculate the national impacts of potential amended or new energy conservation standards on energy use, NPV, and future manufacturer cash flows.<sup>82</sup> The shipments model takes an accounting approach, tracking market shares of each product class and the vintage of units in the stock. Stock accounting uses product shipments as inputs to estimate the age distribution of in-service product stocks for all years. The age distribution of in-service product stocks is a key input to calculations of both the NES and NPV, because operating costs for any year depend on the age distribution of the stock.

DOE projected distribution transformer shipments for the no-new standards case by assuming that long-

<sup>82</sup> DOE uses data on manufacturer shipments as a proxy for national sales, as aggregate data on sales are lacking. In general one would expect a close correspondence between shipments and sales.

term growth in distribution transformer shipments will be driven by long-term growth in electricity consumption. DOE developed its initial shipments inputs based on data from the previous final rule, and data submitted to DOE from interested parties; these initial shipments are shown for the assumed compliance year, by distribution transformer type, in Table IV.13 through Table IV.15. For this NOPR, DOE received additional data from

manufacturers via confidential interviews, resulting in revised shipments estimates for liquid-immersed distribution transformers. DOE developed the shipments projection for liquid-immersed distribution transformers by assuming that annual shipments growth is equal to growth in electricity consumption for all sectors, as given by the AEO2022 forecast through 2050. DOE's model assumed that growth in annual

shipments of dry-type distribution transformers would be equal to the growth in electricity consumption for commercial and industrial sectors, respectively. The model starts with an estimate of the overall growth in distribution transformer capacity, and then estimates shipments for particular representative units and capacities using estimates of the recent market shares for different design and size categories.

TABLE IV.13—ESTIMATED LIQUID-IMMERSED SHIPMENTS FOR 2027 (UNITS)

Capacity (kVA)	Single-phase		Three-phase		
	Pad	OH	Pad	OH	NVS
10	677	71,325	0	0	0
15	4,679	147,344	0	0	0
25	44,873	329,589	0	0	0
30	0	0	10	68	0
38	8,184	45,629	0	0	0
45	0	0	714	692	0
50	79,074	149,710	0	0	0
75	42,684	24,149	6,523	661	0
100	32,830	20,537	0	0	0
113	0	0	1,773	95	0
150	0	0	13,066	787	0
167	8,272	5,926	0	0	0
225	0	0	2,972	16	0
250	134	508	0	0	0
300	0	0	13,061	268	0
333	4	890	0	0	0
500	3	488	9,867	0	3
667	6	0	13	0	13
750	0	0	6,057	0	49
833	70	21	39	0	39
1,000	0	0	5,426	0	127
1,500	0	0	5,886	0	150
2,000	0	0	2,349	0	103
2,500	0	0	3,701	0	359
3,750	0	0	286	0	0
5,000	0	0	95	0	0
Total	221,490	796,116	71,838	2,587	843

TABLE IV.14—ESTIMATED LOW-VOLTAGE DRY-TYPE SHIPMENTS FOR 2027 (UNITS)

Capacity (kVA)	Single-phase	Three-phase
10	3	.....
15	2,792	18,398
25	6,215	.....
30	.....	44,689
37.5	3,777	.....
45	.....	47,106
50	5,821	.....
75	3,508	62,205
100	2,200	.....
112.3	.....	27,858
150	.....	22,062
167	.....	.....
225	.....	7,828
250	28	.....
300	.....	4,109
333	.....	.....
500	.....	2,527
667	.....	.....
750	.....	614
833	.....	.....
1,000	.....	17

TABLE IV.14—ESTIMATED LOW-VOLTAGE DRY-TYPE SHIPMENTS FOR 2027 (UNITS)—Continued

Capacity (kVA)	Single-phase	Three-phase
1,500 .....	.....	11
2,000 .....	.....	.....
2,500 .....	.....	.....
Total .....	24,344	237,423

TABLE IV.15—ESTIMATED MEDIUM-VOLTAGE DRY-TYPE SHIPMENTS FOR 2027 (UNITS)

Capacity (kVA)	Single-phase			Three-phase		
	20–45 kV BIL	46–95 kV BIL	≥96 kV BIL	20–45 kV BIL	46–95 kV BIL	≥96 kV BIL
10 .....	250	180	60	0	0	0
15 .....	250	180	60	5	0	0
25 .....	60	40	20	0	0	0
30 .....	0	0	0	10	0	0
38 .....	60	40	20	0	0	0
45 .....	0	0	0	10	0	0
50 .....	30	20	10	0	0	0
75 .....	30	20	10	4	2	0
100 .....	12	20	6	0	0	0
113 .....	0	0	0	30	4	0
150 .....	0	0	0	35	5	0
167 .....	7	10	3	0	0	0
225 .....	0	0	0	29	12	0
250 .....	15	20	3	0	0	0
300 .....	15	0	0	91	30	25
333 .....	12	20	4	0	0	0
500 .....	0	0	0	177	85	74
667 .....	0	0	0	0	0	0
750 .....	0	0	0	72	121	75
833 .....	0	0	0	0	0	0
1,000 .....	0	0	0	45	242	194
1,500 .....	0	0	0	0	363	244
2,000 .....	0	0	0	0	605	280
2,500 .....	0	0	0	0	605	394
3,750 .....	0	0	0	0	12	8
5,000 .....	0	0	0	0	4	3
Total .....	741	550	196	508	2,074	1,297

1. Equipment Switching

In response to the shipments analysis presented in the August 2021 Preliminary Analysis TSD, NEMA commented that manufacturers have had customers avoid liquid-immersed entirely and use dry-type designs due to local purchasing restrictions or policies. (NEMA, No. 50 at p. 14)

DOE understands that medium-voltage dry-type distribution transformers (MVDT) can be used as replacement for liquid-immersed distribution transformers but DOE has always considered it as an edge case due to the differences in purchase price, and consumer sensitivity to first costs. DOE does not have sufficient data to model the substitution of liquid-immersed distribution transformers with MVDT.

DOE requests comment on which liquid-immersed distribution transformers capacities are typically replaced with MVDT. DOE further

requests data that would indicate a trend in these substitutions. DOE further requests data that would help it determine which types of customers are performing these substitutions, e.g., industrial customers, inverter owned utilities, MUNIs, etc.

2. Trends in Distribution Transformer Capacity (kVA)

NEMA commented that as consumer demand increases due to migration to all-electric homes and buildings, it stands to reason that kVA sizes will increase over time as infrastructure upgrades capacity to serve these consumer demands. Likewise, NEMA commented that investments in renewable energy generation will cause changes to transformer shipments, unit sizes and selections, and, that DOE should examine non-static capacity scenarios, where kVA of units by type increases over time as NEMA members express growth in average kVA of

ordered units over time in recent years, presumably due to increased electrification of consumer and industrial applications. (NEMA, No. 50 at pp. 16–17)

DOE has limited data available to conduct the sensitivity requested by NEMA at this time. To do so DOE would require the current average kVA capacity for each of the representative units analyzed in the engineering analysis, section IV.C.1 of this document. If DOE were to apply a shift in growing capacity without input data from stakeholders, it would have the effect on inflating the energy savings estimates. In response to NEMA’s comment DOE requests data to inform a shift in the capacity distribution to larger capacity distribution transformers. Additionally, DOE requests information on the extent that this increasing trend in capacity would affect all types of distribution

transformers, or only medium-voltage distribution transformers.

H. National Impact Analysis

The NIA assesses the national energy savings (“NES”) and the NPV from a national perspective of total consumer costs and savings that would be expected to result from new or amended standards at specific efficiency levels.<sup>83</sup> (“Consumer” in this context refers to consumers of the product being regulated.) DOE calculates the NES and NPV for the potential standard levels considered based on projections of annual product shipments, along with the annual energy consumption and total installed cost data from the energy use and LCC analyses. For the present analysis, DOE projected the energy savings, operating cost savings, product

costs, and NPV of consumer benefits over the lifetime of distribution transformers sold from 2027 through 2056.

DOE evaluates the impacts of new or amended standards by comparing a case without such standards with standards-case projections. The no-new-standards case characterizes energy use and consumer costs for each product class in the absence of new or amended energy conservation standards. For this projection, DOE considers historical trends in efficiency and various forces that are likely to affect the mix of efficiencies over time. DOE compares the no-new-standards case with projections characterizing the market for each product class if DOE adopted new or amended standards at specific energy efficiency levels (*i.e.*, the TSLs or

standards cases) for that class. For the standards cases, DOE considers how a given standard would likely affect the market shares of products with efficiencies greater than the standard.

DOE uses a model to calculate the energy savings and the national consumer costs and savings from each TSL. Interested parties can review DOE’s analyses by changing various input quantities within the model. The NIA model uses typical values (as opposed to probability distributions) as inputs.

Table IV.16 summarizes the inputs and methods DOE used for the NIA analysis for the NOPR. Discussion of these inputs and methods follows the table. See chapter 10 of the NOPR TSD for further details.

TABLE IV.16—SUMMARY OF INPUTS AND METHODS FOR THE NATIONAL IMPACT ANALYSIS

Inputs	Method
Shipments .....	Annual shipments from shipments model. <i>Initial Shipments</i> : Market reports from HVOLT, stakeholder data, confidential manufacturer data. <i>Future Shipments</i> : Projection based on trends from AEO2022: <i>Liquid-immersed</i> : Future electricity sales trends. <i>Low-, Medium-voltage Dry-type</i> : Future commercial floor space and industrial output trends. 2027.
Compliance Date of Standard .....	No-new-standards case: constant efficiency over time. Standards cases: constant efficiency over time.
Efficiency Trends .....	
Annual Energy Consumption per Unit .....	Annual weighted-average values are a function of energy use at each TSL. Annual weighted-average values are a function of cost at each TSL. Incorporates projection of future product prices based on historical data.
Total Installed Cost per Unit .....	
Annual Energy Cost per Unit .....	Annual weighted-average values as a function of the annual energy consumption per unit and energy prices.
Repair and Maintenance Cost per Unit .....	Annual values do not change with efficiency level.
Energy Price Trends .....	AEO2022 projections (to 2050) and constant 2050 thereafter.
Energy Site-to-Primary and FFC Conversion .....	A time-series conversion factor based on AEO2022.
Discount Rate .....	3 percent and 7 percent.
Present Year .....	2022.

DOE projected the energy savings, operating cost savings, product costs, and NPV of consumer benefits over the lifetime of distribution transformers sold from 2027 through 2056. Given the extremely durable nature of distribution transformers, this creates an analytical timeframe from 2027 through 2115. DOE seeks comment on the current analytical timeline, and potential alternative analytical timeframes.

1. Equipment Efficiency Trends

A key component of the NIA is the trend in energy efficiency projected for the no-new-standards case and each of the standards cases. Section IV.F.3 of this document describes how DOE developed an energy efficiency distribution for the no-new-standards case for each of the considered

equipment classes for the year of anticipated compliance with an amended or new standard. As discussed in section IV.F.3, DOE has found that the vast majority of distribution transformers are purchased based on first cost. For both the no-new standards case and amended standards case, DOE used the results of the consumer choice mode in the LCC, described in section IV.F.3 to establish the shipment-weighted efficiency for the year of potential standards are assumed to become effective (2027). For this NOPR, despite the availability of a wide range of efficiencies, DOE modelled that these efficiencies would remain static over time because the purchase decision is largely based on first-costs (see section IV.F.3 of this document) and DOE’s

application of constant future equipment costs (see section IV.F.1 of this document).

2. National Energy Savings

The national energy savings analysis involves a comparison of national energy consumption of the considered products between each potential standards case (“TSL”) and the case with no new or amended energy conservation standards. DOE calculated the national energy consumption by multiplying the number of units (stock) of each product (by vintage or age) by the unit energy consumption (also by vintage). DOE calculated annual NES based on the difference in national energy consumption for the no-new standards case and for each higher efficiency standard case. DOE estimated

<sup>83</sup> The NIA accounts for impacts in the 50 states and U.S. territories.

energy consumption and savings based on site energy and converted the electricity consumption and savings to primary energy (*i.e.*, the energy consumed by power plants to generate site electricity) using annual conversion factors derived from *AEO2022*. Cumulative energy savings are the sum of the NES for each year over the timeframe of the analysis.

Use of higher-efficiency equipment is occasionally associated with a direct rebound effect, which refers to an increase in utilization of the equipment due to the increase in efficiency and its lower operating cost. A distribution transformer's utilization is entirely dependent on the aggregation of the connected loads on the circuit the distribution transformer serves. Greater utilization would result in greater per-unit load (PUL) on the distribution transformer. Any increase in distribution transformer PUL is coincidental, and not related to rebound effect.

DOE accounts for incidental load growth on the distribution transformer resulting from additional connections not related to the rebound effect due to increased equipment efficiency in the LCC analysis in the form of future load growth. See section IV.E.3 for more details on DOE approach to load growth.

Because DOE did not find any data to support the inclusion of a rebound effect specific to distribution transformers, DOE did not include a rebound effect in this NOPR.

DOE requests comment on its assumption that including a rebound effect is inappropriate for distribution transformers.

In 2011, in response to the recommendations of a committee on "Point-of-Use and Full-Fuel-Cycle Measurement Approaches to Energy Efficiency Standards" appointed by the National Academy of Sciences, DOE announced its intention to use FFC measures of energy use and greenhouse gas and other emissions in the national impact analyses and emissions analyses included in future energy conservation standards rulemakings. 76 FR 51281 (Aug. 18, 2011). After evaluating the approaches discussed in the August 18, 2011 notice, DOE published a statement of amended policy in which DOE explained its determination that EIA's National Energy Modeling System ("NEMS") is the most appropriate tool for its FFC analysis and its intention to use NEMS for that purpose. 77 FR 49701 (Aug. 17, 2012). NEMS is a public domain, multi-sector, partial equilibrium model of the U.S. energy

sector<sup>84</sup> that EIA uses to prepare its *Annual Energy Outlook*. The FFC factors incorporate losses in production and delivery in the case of natural gas (including fugitive emissions) and additional energy used to produce and deliver the various fuels used by power plants. The approach used for deriving FFC measures of energy use and emissions is described in appendix 10B of the NOPR TSD.

### 3. Net Present Value Analysis

The inputs for determining the NPV of the total costs and benefits experienced by consumers are (1) total annual installed cost, (2) total annual operating costs (energy costs and repair and maintenance costs), and (3) a discount factor to calculate the present value of costs and savings. DOE calculates net savings each year as the difference between the no-new-standards case and each standards case in terms of total savings in operating costs versus total increases in installed costs. DOE calculates operating cost savings over the lifetime of each product shipped during the projection period.

As discussed in section IV.F.1 of this document, DOE developed distribution transformers price trends based on historical PPI data. DOE applied the same trends to project prices for each product class at each considered efficiency level, which was a constant price trend through the end of the analysis period in 2056. DOE's projection of product prices is described in appendix 10C of the NOPR TSD.

To evaluate the effect of uncertainty regarding the price trend estimates, DOE investigated the impact of different product price projections on the consumer NPV for the considered TSLs for distribution transformers. In addition to the default price trend, DOE considered two product price sensitivity cases: (1) a high price decline case based on the years between 2003–2019 and (2) a low price decline case based on the years between 1967–2002. The derivation of these price trends and the results of these sensitivity cases are described in appendix 10C of the NOPR TSD.

The operating cost savings are energy cost savings, which are calculated using the estimated energy savings in each year and the projected price of the appropriate form of energy. To estimate energy prices in future years, DOE multiplied the average regional energy prices by the projection of annual

national-average electricity price changes in the Reference case from *AEO2022*, which has an end year of 2050. To estimate price trends after 2050, DOE maintained the price constant at 2050 levels. As part of the NIA, DOE also analyzed scenarios that used inputs from variants of the *AEO2022* Reference case that have lower and higher economic growth. Those cases have lower and higher energy price trends compared to the Reference case. NIA results based on these cases are presented in appendix 10C of the NOPR TSD.

In calculating the NPV, DOE multiplies the net savings in future years by a discount factor to determine their present value. For this NOPR, DOE estimated the NPV of consumer benefits using both a 3-percent and a 7-percent real discount rate. DOE uses these discount rates in accordance with guidance provided by the Office of Management and Budget ("OMB") to Federal agencies on the development of regulatory analysis.<sup>85</sup> The discount rates for the determination of NPV are in contrast to the discount rates used in the LCC analysis, which are designed to reflect a consumer's perspective. The 7-percent real value is an estimate of the average before-tax rate of return to private capital in the U.S. economy. The 3-percent real value represents the "social rate of time preference," which is the rate at which society discounts future consumption flows to their present value.

#### I. Consumer Subgroup Analysis

In analyzing the potential impact of new or amended energy conservation standards on consumers, DOE evaluates the impact on identifiable subgroups of consumers that may be disproportionately affected by a new or amended national standard. The purpose of a subgroup analysis is to determine the extent of any such disproportional impacts. DOE evaluates impacts on particular subgroups of consumers by analyzing the LCC impacts and PBP for those particular consumers from alternative standard levels. For this NOPR, DOE analyzed the impacts of the considered standard levels on two subgroups: (1) utilities serving low population densities and (2) utility purchasers of vault (underground) and subsurface installations. DOE used the LCC and PBP model to estimate the impacts of the considered efficiency levels on these

<sup>84</sup> For more information on NEMS, refer to *The National Energy Modeling System: An Overview 2009*, DOE/EIA-0581(2009), October 2009. Available at [www.eia.gov/forecasts/aeo/index.cfm](http://www.eia.gov/forecasts/aeo/index.cfm) (last accessed April 1, 2022).

<sup>85</sup> United States Office of Management and Budget. *Circular A-4: Regulatory Analysis*. September 17, 2003. Section E. Available at [www.whitehouse.gov/omb/memoranda/m03-21.html](http://www.whitehouse.gov/omb/memoranda/m03-21.html) (last accessed April 1, 2022).

subgroups. Chapter 11 in the NOPR TSD describes the consumer subgroup analysis.

1. Utilities Serving Low Customer Populations

In rural areas, mostly served by municipal utilities (MUNIs) the number of customers per distribution transformer is lower than in

metropolitan areas and may result in lower PULs. For this NOPR, as in the April 2013 Standards Final Rule, DOE reduced the PUL by adjusting the distribution of IPLs, as discussed in section IV.E.1.a resulting in the PULs shown below in Table IV.17. Further, DOE altered the customer sample to limit the distribution of discount rates to those observed by State and local

governments discussed in IV.F.9. DOE notes that while MUNIs deploy a range of distribution transformers to serve their customers, in low population densities the most common unit is a 25 kVA pole overhead liquid-immersed distribution transformer, which is represented in this analysis as representative unit 2.

TABLE IV.17—DISTRIBUTION OF PER-UNIT-LOAD FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS OWNED BY UTILITIES SERVING LOW POPULATIONS

Rep. unit	Mean RMS	Mean IPL	Mean PUL
1 .....	0.29	0.60	0.18
2 .....	0.27	0.60	0.16
3 .....	0.32	0.60	0.19
4 .....	0.26	0.60	0.15
5 .....	0.31	0.60	0.19

DOE requests comment on the mean PUL applied to distribution transformers owned and operated by utilities serving low customer populations.

2. Utility Purchasers of Vault (Underground) and Subsurface Installations

In some urban areas, utilities provide service to customers by deploying parts of their transformer fleet in subsurface vaults, or other prefabricated underground concrete structure, referred to as vaults. At issue in the potential amended standards case is that as the volume (ft<sup>3</sup>) of the more efficient replacement transformers may be too large to fit into the existing vault, which would have to be replaced to fit the new equipment. This analysis is applied to the representative units 15 and 16,

specifically defined in the engineering analysis for vault and submersible liquid-immersed distribution transformers (see section IV.C.1).

NEMA commented that they agree with the proposed approach to examine utility costs regarding replacement of existing vault and subsurface transformers. (NEMA No 18 at p. 17).

DOE has not received any data from stakeholders regarding the costs associated with vault replacement due increased distribution transformer volume. For this subgroups analysis DOE examined the National average price of concrete vault construction with 6-inch-thick walls for variously sized vaults from RSMMeans.<sup>86</sup> DOE notes that the costs required to install a new vault can vary above the cost of the prefabricated concrete vault. These additional costs would include but are

not limited to, excavation and disposal of the original vault, and backfilling. While stakeholders have discussed that these costs can be prohibitive, they have not to date provided examples of such costs, or itemized cost breakdowns associated with vault replacement. Due to this lack of information DOE has taken a simple approach and multiplied the costs from RSMMeans by three to provide a gross vault installation estimate. This gross vault installation estimate represents the labor time and material costs associated with excavation, vault installation, and backfilling when replacing the no-new-standards vault with a new structure. DOE applied the following simple linear fit relating the cost of vault replacement to transformer volume.

$$VaultReplacement = 24.201 \times DTVolume + 4,930.8$$

TABLE IV.18—VAULT REPLACEMENT COSTS [2021\$]

Vault dimensions (ft)	Volume (ft <sup>3</sup> )	Replacement cost (2021\$)
5' × 10' × 6' high .....	300	12,450
5' × 12' × 6' high .....	360	13,050
6' × 10' × 6' high .....	360	13,050
6' × 12' × 6' high .....	360	14,625
6' × 13' × 6' high .....	468	18,300
8' × 14' × 7' high .....	784	23,550

DOE requests comment on its assumed vault replacement costs methodology. DOE seeks comment or data regarding the installation procedures associated with vault

replacement, vault expansion (renovation), and vault transformer installation and their respective costs for replacement transformers. Additionally, DOE seeks information on

the typical expected lifetime of underground concrete vaults.

<sup>86</sup> RSMMeans, Series: 330563130050, 330563130150, 330563130100, 330563130200,

330563130250, 330563130300, <https://www.rsmeans.com/> (Last access: March 15, 2022).

## J. Manufacturer Impact Analysis

### 1. Overview

DOE performed an MIA to estimate the financial impacts of amended energy conservation standards on manufacturers of distribution transformers and to estimate the potential impacts of such standards on employment and manufacturing capacity. The MIA has both quantitative and qualitative aspects and includes analyses of projected industry cash flows, the INPV, investments in research and development (“R&D”) and manufacturing capital, and domestic manufacturing employment. Additionally, the MIA seeks to determine how amended energy conservation standards might affect manufacturing employment, capacity, and competition, as well as how standards contribute to overall regulatory burden. Finally, the MIA serves to identify any disproportionate impacts on manufacturer subgroups, including small business manufacturers.

The quantitative part of the MIA primarily relies on the Government Regulatory Impact Model (“GRIM”), an industry cash flow model with inputs specific to this rulemaking. The key GRIM inputs include data on the industry cost structure, unit production costs, product shipments, manufacturer markups, and investments in R&D and manufacturing capital required to produce compliant equipment. The key GRIM outputs are the INPV, which is the sum of industry annual cash flows over the analysis period, discounted using the industry-weighted average cost of capital, and the impact to domestic manufacturing employment. The model uses standard accounting principles to estimate the impacts of more-stringent energy conservation standards on a given industry by comparing changes in INPV and domestic manufacturing employment between a no-new-standards case and the various standards cases (*i.e.*, TSLs). To capture the uncertainty relating to manufacturer pricing strategies following amended standards, the GRIM estimates a range of possible impacts under different scenarios.

The qualitative part of the MIA addresses manufacturer characteristics and market trends. Specifically, the MIA considers such factors as a potential standard’s impact on manufacturing capacity, competition within the industry, the cumulative impact of other DOE and non-DOE regulations, and impacts on manufacturer subgroups. The complete MIA is outlined in chapter 12 of the NOPR TSD.

DOE conducted the MIA for this rulemaking in three phases. In Phase 1 of the MIA, DOE prepared a profile of the distribution transformer manufacturing industry based on the market and technology assessment, preliminary manufacturer interviews, and publicly available information. This included a top-down analysis of distribution transformer manufacturers that DOE used to derive preliminary financial inputs for the GRIM (*e.g.*, revenues; materials, labor, overhead, and depreciation expenses; selling, general, and administrative expenses (“SG&A”); and R&D expenses). DOE also used public sources of information to further calibrate its initial characterization of the distribution transformer manufacturing industry, including information from the April 2013 Standards Final Rule, individual company filings of form 10-K from the SEC,<sup>87</sup> corporate annual reports, the U.S. Census Bureau’s *Economic Census*,<sup>88</sup> and reports from D&B Hoovers.<sup>89</sup>

In Phase 2 of the MIA, DOE prepared a framework industry cash-flow analysis to quantify the potential impacts of amended energy conservation standards. The GRIM uses several factors to determine a series of annual cash flows starting with the announcement of the standard and extending over a 30-year period following the compliance date of the standard. These factors include annual expected revenues, costs of sales, SG&A and R&D expenses, taxes, and capital expenditures. In general, energy conservation standards can affect manufacturer cash flow in three distinct ways: (1) creating a need for increased investment, (2) raising production costs per unit, and (3) altering revenue due to higher per-unit prices and changes in sales volumes.

In addition, during Phase 2, DOE developed interview guides to distribute to manufacturers of distribution transformers in order to develop other key GRIM inputs, including product and capital conversion costs, and to gather additional information on the anticipated effects of energy conservation standards on revenues, direct employment, capital assets, industry competitiveness, industry consolidation, and manufacturer subgroup impacts.

In Phase 3 of the MIA, DOE conducted structured, detailed interviews with representative manufacturers. During these interviews,

DOE discussed engineering, manufacturing, procurement, and financial topics to validate assumptions used in the GRIM and to identify key issues or concerns. See section IV.J.3 of this document for a description of the key issues raised by manufacturers during the interviews. As part of Phase 3, DOE also evaluated subgroups of manufacturers that may be disproportionately impacted by amended standards or that may not be accurately represented by the average cost assumptions used to develop the industry cash flow analysis. Such manufacturer subgroups may include small business manufacturers, low-volume manufacturers (“LVMs”), niche players, and/or manufacturers exhibiting a cost structure that largely differs from the industry average. DOE identified one subgroup for a separate impact analysis: small business manufacturers. The small business subgroup is discussed in section VI.B, “Review under the Regulatory Flexibility Act” and in chapter 12 of the NOPR TSD.

### 2. Government Regulatory Impact Model and Key Inputs

DOE uses the GRIM to quantify the changes in cash flow due to amended standards that result in a higher or lower industry value. The GRIM uses a standard, annual discounted cash-flow analysis that incorporates manufacturer costs, markups, shipments, and industry financial information as inputs. The GRIM models changes in costs, distribution of shipments, investments, and manufacturer margins that could result from amended energy conservation standards. The GRIM spreadsheet uses the inputs to arrive at a series of annual cash flows, beginning in 2022 (the reference year of the analysis) and continuing to 2056. DOE calculated INPVs by summing the stream of annual discounted cash flows during this period. For manufacturers of distribution transformers, DOE used a real discount rate of 7.4 percent for liquid-immersed distribution transformers, 11.1 percent for low-voltage dry-type distribution transformers, and 9.0 percent for medium-voltage dry-type distribution transformers, which was derived from the April 2013 Standards Final Rule and then modified according to feedback received during manufacturer interviews.<sup>90</sup>

<sup>90</sup> See Chapter 12 of the April 2013 Final Rule TSD for discussion of where initial discount factors were derived, available online at [www.regulations.gov/document/EERE-2010-BT-STD-0048-0760](http://www.regulations.gov/document/EERE-2010-BT-STD-0048-0760). For the April 2013 Final Rule, DOE initially calculated a 9.1 percent discount rate,

<sup>87</sup> [www.sec.gov/edgar.shtml](http://www.sec.gov/edgar.shtml).

<sup>88</sup> [www.census.gov/programs-surveys/asm.html](http://www.census.gov/programs-surveys/asm.html).

<sup>89</sup> [www.avention.com](http://www.avention.com).

DOE requests comment on the real discount rates used in this NOPR. Specifically, if 7.4 percent for liquid-immersed distribution transformer manufacturers, 11.1 percent for low-voltage dry-type distribution transformer manufacturers, and 9.0 percent for medium-voltage dry-type distribution transformer manufacturers are appropriate discount rates to use in the GRIM.

The GRIM calculates cash flows using standard accounting principles and compares changes in INPV between the no-new-standards case and each standards case. The difference in INPV between the no-new-standards case and a standards case represents the financial impact of amended energy conservation standards on manufacturers. As discussed previously, DOE developed critical GRIM inputs using a number of sources, including publicly available data, results of the engineering analysis and shipments analysis, and information gathered from industry stakeholders during the course of manufacturer interviews. The GRIM results are presented in section V.B.2. Additional details about the GRIM, the discount rate, and other financial parameters can be found in chapter 12 of the NOPR TSD.

#### a. Manufacturer Production Costs

Manufacturing more efficient equipment is typically more expensive than manufacturing baseline equipment due to the use of more complex components, which are typically more costly than baseline components. The changes in the MPCs of covered products can affect the revenues, gross margins, and cash flow of the industry.

During the engineering analysis, DOE used transformer design software to create a database of designs spanning a broad range of efficiencies for each of the representative units. This design software generated a bill of materials. DOE then applied markups to allow for scrap, handling, factory overhead, and other non-production costs, as well as profit, to estimate the MSP.

These designs and their MSPs are subsequently inputted into the LCC customer choice model. For each efficiency level and within each representative unit, the LCC model uses a consumer choice model and criteria described in section IV.F.3 to select a subset of all the potential designs

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however during manufacturer interviews conducted for that rulemaking, manufacturers suggested using different discount rates specific for each equipment class group. During manufacturer interviews conducted for this NOPR, manufacturers continued to agree that using different discount rates for each equipment class group is appropriate.

options (and associated MSPs). This subset is meant to represent those designs that would actually be shipped in the market under the various analyzed TSLs. DOE inputted into the GRIM the weighted average cost of the designs selected by the LCC model and scaled those MSPs to other selected capacities in each design line's KVA range.

For a complete description of the MSPs, see chapter 5 of the NOPR TSD.

#### b. Shipments Projections

The GRIM estimates manufacturer revenues based on total unit shipment projections and the distribution of those shipments by efficiency level. Changes in sales volumes and efficiency mix over time can significantly affect manufacturer finances. For this analysis, the GRIM uses the NIA's annual shipment projections derived from the shipments analysis from 2022 (the reference year) to 2056 (the end year of the analysis period). See chapter 9 of the NOPR TSD for additional details.

#### c. Product and Capital Conversion Costs

Amended energy conservation standards could cause manufacturers to incur conversion costs to bring their production facilities and equipment designs into compliance. DOE evaluated the level of conversion-related expenditures that would be needed to comply with each considered efficiency level in each equipment class. For the MIA, DOE classified these conversion costs into two major groups: (1) product conversion costs; and (2) capital conversion costs. Product conversion costs are investments in research, development, testing, marketing, and other non-capitalized costs necessary to make product designs comply with amended energy conservation standards. Capital conversion costs are investments in property, plant, and equipment necessary to adapt or change existing production facilities such that new compliant equipment designs can be fabricated and assembled.

For capital conversion costs, DOE prepared bottom-up estimates of the costs required to meet amended standards at each TSL for each representative unit. To do this, DOE used equipment cost estimates from the April 2013 Standards Final Rule and from information provided by manufacturers and equipment suppliers, an understanding of the manufacturing processes at distribution transformer manufacturing facilities developed during interviews and in consultation with subject matter experts, and the properties associated with different core and winding materials. Major drivers of

capital conversion costs include changes in core steel type (and thickness), core weight, and core stack height, all of which are interdependent and can vary by efficiency level. DOE uses estimates of the core steel quantities needed by steel type for each TSL to model the additional equipment the industry would need to meet each TSL.

Capital conversion costs are primarily driven at each TSL by the potential need for the industry to expand capacity for amorphous production. Based on interviews with manufacturers and equipment suppliers, based on the responses, DOE's model assumed an amorphous production line capable of producing 1,200 tons annual of amorphous cores would cost approximately \$1,000,000 in capital investments. This includes costs associated with purchasing annealing ovens, core cutting machines, lacing tables, and other miscellaneous equipment. The quantity of amorphous steel are outputs of the engineering analysis and the LCC. At higher TSLs, the percent of distribution transformers selected in the LCC consumer choice model that have amorphous cores increases. Additionally, at the highest TSLs, the quantity of amorphous steel per distribution transformer also increases. As the increasing stringency of the TSLs drive the use of amorphous cores in distribution transformers, capital conversion costs increase.

For product conversion costs, DOE understands the production of amorphous cores requires unique expertise and equipment. For manufacturers without experience with amorphous steel, a standard that would likely be met using amorphous cores would require the development or the procurement of the technical knowledge to produce cores. Because amorphous steel is thinner and more brittle after annealing, materials management, safety measures, and design considerations that are not associated with non-amorphous steels would need to be implemented.

DOE estimated product conversion costs would be equal to the annual industry R&D expenses for those TSLs where a majority of the market would be expected to transition to amorphous material. These one-time product conversion costs would be in addition to the annual R&D expenses normally incurred by distribution transformer manufacturers. These one-time expenditures account for the design, engineering, prototyping, and other R&D efforts the industry would have to undertake to move to a predominately amorphous market. For TSLs that would



not require the use of amorphous cores, but would still require distribution transformer models to be redesigned to meet higher efficiency levels, DOE estimated product conversion costs would be equal to 50 percent the annual industry R&D expenses. These one-time product conversion costs would also be in addition to the annual R&D expenses normally incurred by distribution transformer manufacturers.

Capital and product conversion costs are key inputs into the GRIM and directly impact the change in INPV (which is outputted from the model) due to analyzed amended standards. The GRIM assumes all conversion-related investments occur between the year of publication of the final rule and the year by which manufacturers must comply with the amended standards. The conversion cost figures used in the GRIM can be found in section V.B.2 of this document. For additional information on the estimated capital and product conversion costs, see chapter 12 of the NOPR TSD.

#### d. Manufacturer Markup Scenarios

MSPs include direct manufacturing production costs (*i.e.*, labor, materials, and overhead estimated in DOE's MPCs) and all non-production costs (*i.e.*, SG&A, R&D, and interest), along with profit. To calculate the MSPs in the GRIM, DOE applied manufacturer markups to the MPCs estimated in the engineering analysis for each equipment class and efficiency level. Modifying these margins in the standards case yields different sets of impacts on manufacturers. For the MIA, DOE modeled two standards-case scenarios to represent uncertainty regarding the potential impacts on prices and profitability for manufacturers following the implementation of amended energy conservation standards: (1) a preservation of gross margin percentage markup scenario; and (2) a preservation of operating profit scenario. These scenarios lead to different margins that, when applied to the MPCs, result in varying revenue and cash flow impacts on distribution transformer manufacturers.

Under the preservation of gross margin percentage scenario, DOE applied the same single uniform "gross margin percentage" that is used in the no-new-standards case across all efficiency levels in the standards cases. This scenario assumes that manufacturers would be able to maintain the same amount of profit as a percentage of revenues at all TSLs, even as the MPCs increase in the standards case. Based on data from the April 2013 Standards Final Rule,

publicly available financial information for manufacturers of distribution transformers, and comments made during manufacturer interviews, DOE estimated a gross margin percentage of 20 percent for all distribution transformers.<sup>91</sup> Because this scenario assumes that manufacturers would be able to maintain the same gross margin percentage as MPCs increase in response to the analyzed energy conservation standards, it represents the upper bound to industry profitability under amended energy conservation standards.

Under the preservation of operating profit scenario, DOE modeled a situation in which manufacturers are not able to increase per-unit operating profit in proportion to increases in MPCs. Under this scenario, as the cost of production (MPCs) increase, manufacturers reduce their manufacturer markups (on a percentage basis) to a level that maintains the no-new-standards operating profit (in absolute dollars). The implicit assumption behind this scenario is that the industry can only maintain its operating profit in absolute dollars after compliance with amended standards. Therefore, operating margin in percentage terms is reduced between the no-new-standards case and the analyzed standards cases. DOE adjusted the manufacturer markups in the GRIM at each TSL to yield approximately the same earnings before interest and taxes in the standards case in the year after the compliance date of the amended standards as in the no-new-standards case. This scenario represents the lower bound to industry profitability under amended energy conservation standards.

A comparison of industry financial impacts under the two scenarios is presented in section V.B.2.a of this document.

#### 3. Manufacturer Interviews

DOE interviewed manufacturers representing approximately 60 percent of the liquid-immersed distribution transformer industry; approximately 50 percent of the LVDT distribution transformer industry; and approximately 60 percent of the MVDT distribution transformer industry.

In interviews, DOE asked manufacturers to describe their major concerns regarding this rulemaking. The following section highlights manufacturer concerns that helped inform the projected potential impacts of an amended standard on the industry.

<sup>91</sup> The gross margin percentage of 20 percent is based on a manufacturer markup of 1.25.

Manufacturer interviews are conducted under non-disclosure agreements ("NDAs"), so DOE does not document these discussions in the same way that it does public comments in the comment summaries and DOE's responses throughout the rest of this document.

#### a. Material Shortages and Prices

Throughout interviews and comments, manufacturers noted substantial material shortages leading to both higher, more volatile prices and, at points, an inability to procure certain materials—particularly electrical steel. Manufacturers noted that these shortages reflect rising demand for electrical steel domestically and internationally as well as more general supply chain issues caused by the COVID-19 pandemic. Demand for steel, according to manufacturers, appears to be driven by the growing electric vehicles and electric motors sectors (prompting some steel producers to shift production away from GOES suited for core manufacturing to non-grain-oriented steels suited for electric vehicle production) as well as more general rising demand for electrical steel abroad (leading to foreign steel producers reducing exports to the United States). Manufacturers also noted that prices for copper and aluminum have risen substantially, though have not been subject to allocations as electrical steel has.

Manufacturers stated that higher energy conservation standards will most likely lead to greater demand for materials necessary to build more efficient transformers—potentially leading to less material availability and greater cost concerns, particularly for manufacturers without long-term relationships with suppliers. Further, several manufacturers argued that establishing more stringent energy conservation standards during a period of material price volatility may undermine DOE's analysis as it relates to the short-term and long-term economic impact of such a standard.

#### b. Use of Amorphous Materials

Manufacturers raised concerns about energy conservation standards that would require the use of amorphous steel cores. Manufacturers who currently make their own cores stated that amorphous core production requires a different manufacturing process that would require a substantial amount of new capital equipment and retrofits of existing equipment that could, additionally, require more facility floor space. Some manufacturers noted that they may need to switch to

purchasing cores for products covered by energy conservation standards. Moving from a lower to a higher grade of non-amorphous steel would result in significantly less costs and most manufacturers could continue to use the same core production equipment. Manufacturers that currently purchase cores noted less capital conversion costs associated with such an increase in standards but did note that there is a limited number of suppliers of amorphous steel grades both in North America and globally—potentially meaning a limited supply of amorphous steel in a market with relatively little competition.

#### c. Larger Distribution Transformers

Manufacturers noted that energy conservation standard increases, short of requiring amorphous core usage, would likely lead to larger distribution transformers. Manufacturers stated that larger transformer sizes could complicate efforts to design transformers to replace existing transformers where space is limited. Utilities, for example, have built vaults, where distribution transformers are placed, of a certain size. If a replacement distribution transformer cannot be designed to fit the current vault space, then utilities will need to build new vaults, increasing costs and construction-related disruption significantly. Manufacturers indicated that this was not a significant issue with new construction projects, where infrastructure can be built around the size of the distribution transformer.

#### 4. Discussion of MIA Comments

In response to the August 2021 Preliminary Analysis TSD, a few interested parties made comments regarding the MIA, including comments on small businesses and capital equipment. DOE addresses these comments in this section.

##### a. Small Businesses

Powersmiths commented that large manufacturers are likely to be able to meet higher efficiency standards given they will likely have the resources to make the necessary capital investments to comply with standards and would likely gain additional revenue from the higher per transformer prices. However, if energy conservation standards require large capital investments, these costs could put small businesses out of business. (Powersmiths, No.46 at p. 6) While Schneider commented that there is an increase in the number of companies that produce assembled cores for distribution transformer manufacturers (as opposed to

distribution transformer manufacturers being required to fabricate their own cores internally). Schneider continued stating that the availability to purchase assembled cores would not place a disproportionate burden on small businesses. (Schneider, No. 49 at p. 15)

DOE agrees that large capital and production conversion costs could put additional strains on all distribution transformer manufacturers, and especially small business. As part of the MIA DOE calculates the expected conversion costs (capital and product conversion costs). The methodology for calculating these conversion costs are described in section IV.J.2.c and these cost estimates are presented in section V.B.2.a. Additionally, DOE specifically examines the potential impact of small businesses in section VI.B of this document.

As stated in section IV.J.2.c, conversion costs are primarily driven by the costs associated with the production of amorphous cores, and to a lesser extent larger and more efficient GOES cores. DOE agrees with Schneider's comment that small businesses could mitigate larger conversion costs by purchasing assembled cores as opposed to making the investments to produce more efficient GOES cores or amorphous cores, in order to comply with the analyzed standards.

##### b. Capital Equipment

ERMCO comments that larger cores may require new or different manufacturing equipment. (ERMCO, No. 45 at p. 1) DOE agrees that while capital conversion costs are primarily driven by the costs associated with the production of amorphous cores, there are capital conversion costs associated with production of larger cores. DOE accounts for the need for manufacturers to purchase new or different equipment in the capital conversion cost estimates described in section IV.J.2.c, with these cost estimates presented in section V.B.2.a of this document.

#### K. Emissions Analysis

The emissions analysis consists of two components. The first component estimates the effect of potential energy conservation standards on power sector and site (where applicable) combustion emissions of CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub>, and Hg. The second component estimates the impacts of potential standards on emissions of two additional greenhouse gases, CH<sub>4</sub> and N<sub>2</sub>O, as well as the reductions to emissions of other gases due to “upstream” activities in the fuel production chain. These upstream activities comprise extraction,

processing, and transporting fuels to the site of combustion.

The analysis of electric power sector emissions of CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub>, and Hg uses emissions factors intended to represent the marginal impacts of the change in electricity consumption associated with amended or new standards. The methodology is based on results published for the *AEO*, including a set of side cases that implement a variety of efficiency-related policies. The methodology is described in appendix 13A in the NOPR TSD. The analysis presented in this notice uses projections from *AEO2022*. Power sector emissions of CH<sub>4</sub> and N<sub>2</sub>O from fuel combustion are estimated using Emission Factors for Greenhouse Gas Inventories published by the Environmental Protection Agency (EPA).<sup>92</sup>

FFC upstream emissions, which include emissions from fuel combustion during extraction, processing, and transportation of fuels, and “fugitive” emissions (direct leakage to the atmosphere) of CH<sub>4</sub> and CO<sub>2</sub>, are estimated based on the methodology described in chapter 15 of the NOPR TSD.

The emissions intensity factors are expressed in terms of physical units per MWh or MMBtu of site energy savings. For power sector emissions, specific emissions intensity factors are calculated by sector and end use. Total emissions reductions are estimated using the energy savings calculated in the national impact analysis.

#### 1. Air Quality Regulations Incorporated in DOE's Analysis

DOE's no-new-standards case for the electric power sector reflects the *AEO*, which incorporates the projected impacts of existing air quality regulations on emissions. *AEO2022* generally represents current legislation and environmental regulations, including recent government actions, that were in place at the time of preparation of *AEO2022*, including the emissions control programs discussed in the following paragraphs.<sup>93</sup>

SO<sub>2</sub> emissions from affected electric generating units (“EGUs”) are subject to nationwide and regional emissions cap-and-trade programs. Title IV of the Clean Air Act sets an annual emissions

<sup>92</sup> Available at [www.epa.gov/sites/production/files/2021-04/documents/emission-factors\\_apr2021.pdf](http://www.epa.gov/sites/production/files/2021-04/documents/emission-factors_apr2021.pdf) (last accessed July 12, 2021).

<sup>93</sup> For further information, see the Assumptions to *AEO2022* report that sets forth the major assumptions used to generate the projections in the Annual Energy Outlook. Available at [www.eia.gov/outlooks/aeo/assumptions/](http://www.eia.gov/outlooks/aeo/assumptions/) (last accessed June, 2022).

cap on SO<sub>2</sub> for affected EGUs in the 48 contiguous States and the District of Columbia (DC). (42 U.S.C. 7651 *et seq.*) SO<sub>2</sub> emissions from numerous States in the eastern half of the United States are also limited under the Cross-State Air Pollution Rule (“CSAPR”). 76 FR 48208 (Aug. 8, 2011). CSAPR requires these States to reduce certain emissions, including annual SO<sub>2</sub> emissions, and went into effect as of January 1, 2015.<sup>94</sup> *AEO2022* incorporates implementation of CSAPR, including the update to the CSAPR ozone season program emission budgets and target dates issued in 2016. 81 FR 74504 (Oct. 26, 2016).<sup>95</sup> Compliance with CSAPR is flexible among EGUs and is enforced through the use of tradable emissions allowances. Under existing EPA regulations, for states subject to SO<sub>2</sub> emissions limits under CSAPR, excess SO<sub>2</sub> emissions allowances resulting from the lower electricity demand caused by the adoption of an efficiency standard could be used to permit offsetting increases in SO<sub>2</sub> emissions by another regulated EGU.

However, beginning in 2016, SO<sub>2</sub> emissions began to fall as a result of the Mercury and Air Toxics Standards (“MATS”) for power plants. 77 FR 9304 (Feb. 16, 2012). In the MATS final rule, EPA established a standard for hydrogen chloride as a surrogate for acid gas hazardous air pollutants (“HAP”), and also established a standard for SO<sub>2</sub> (a non-HAP acid gas) as an alternative equivalent surrogate standard for acid gas HAP. The same controls are used to reduce HAP and non-HAP acid gas; thus, SO<sub>2</sub> emissions are being reduced as a result of the control technologies installed on coal-fired power plants to comply with the MATS requirements

<sup>94</sup> CSAPR requires states to address annual emissions of SO<sub>2</sub> and NO<sub>x</sub>, precursors to the formation of fine particulate matter (PM<sub>2.5</sub>) pollution, in order to address the interstate transport of pollution with respect to the 1997 and 2006 PM<sub>2.5</sub> National Ambient Air Quality Standards (“NAAQS”). CSAPR also requires certain states to address the ozone season (May–September) emissions of NO<sub>x</sub>, a precursor to the formation of ozone pollution, in order to address the interstate transport of ozone pollution with respect to the 1997 ozone NAAQS. 76 FR 48208 (Aug. 8, 2011). EPA subsequently issued a supplemental rule that included an additional five states in the CSAPR ozone season program; 76 FR 80760 (Dec. 27, 2011) (Supplemental Rule), and EPA issued the CSAPR Update for the 2008 ozone NAAQS. 81 FR 74504 (Oct. 26, 2016).

<sup>95</sup> In Sept. 2019, the D.C. Court of Appeals remanded the 2016 CSAPR Update to EPA. In April 2021, EPA finalized the 2021 CSAPR Update which resolved the interstate transport obligations of 21 states for the 2008 ozone NAAQS. 86 FR 23054 (April 30, 2021); *see also*, 86 FR 29948 (June 4, 2021) (correction to preamble). The 2021 CSAPR Update became effective on June 29, 2021. The release of AEO 2021 in February 2021 predated the 2021 CSAPR Update.

for acid gas. In order to continue operating, coal power plants must have either flue gas desulfurization or dry sorbent injection systems installed. Both technologies, which are used to reduce acid gas emissions, also reduce SO<sub>2</sub> emissions. Because of the emissions reductions under the MATS, it is unlikely that excess SO<sub>2</sub> emissions allowances resulting from the lower electricity demand would be needed or used to permit offsetting increases in SO<sub>2</sub> emissions by another regulated EGU. Therefore, energy conservation standards that decrease electricity generation would generally reduce SO<sub>2</sub> emissions. DOE estimated SO<sub>2</sub> emissions reduction using emissions factors based on *AEO2022*.

CSAPR also established limits on NO<sub>x</sub> emissions for numerous States in the eastern half of the United States. Energy conservation standards would have little effect on NO<sub>x</sub> emissions in those States covered by CSAPR emissions limits if excess NO<sub>x</sub> emissions allowances resulting from the lower electricity demand could be used to permit offsetting increases in NO<sub>x</sub> emissions from other EGUs. In such case, NO<sub>x</sub> emissions would remain near the limit even if electricity generation goes down. A different case could possibly result, depending on the configuration of the power sector in the different regions and the need for allowances, such that NO<sub>x</sub> emissions might not remain at the limit in the case of lower electricity demand. In this case, energy conservation standards might reduce NO<sub>x</sub> emissions in covered States. Despite this possibility, DOE has chosen to be conservative in its analysis and has maintained the assumption that standards will not reduce NO<sub>x</sub> emissions in States covered by CSAPR. Energy conservation standards would be expected to reduce NO<sub>x</sub> emissions in the States not covered by CSAPR. DOE used *AEO2022* data to derive NO<sub>x</sub> emissions factors for the group of States not covered by CSAPR.

The MATS limit mercury emissions from power plants, but they do not include emissions caps and, as such, DOE’s energy conservation standards would be expected to slightly reduce Hg emissions. DOE estimated mercury emissions reduction using emissions factors based on *AEO2022*, which incorporates the MATS.

#### L. Monetizing Emissions Impacts

As part of the development of this proposed rule, for the purpose of complying with the requirements of Executive Order 12866, DOE considered the estimated monetary benefits from the reduced emissions of CO<sub>2</sub>, CH<sub>4</sub>,

N<sub>2</sub>O, NO<sub>x</sub>, and SO<sub>2</sub> that are expected to result from each of the TSLs considered. In order to make this calculation analogous to the calculation of the NPV of consumer benefit, DOE considered the reduced emissions expected to result over the lifetime of products shipped in the projection period for each TSL. This section summarizes the basis for the values used for monetizing the emissions benefits and presents the values considered in this NOPR.

On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this rule, DOE has reverted to its approach prior to the injunction and presents monetized greenhouse gas abatement benefits where appropriate and permissible under law. DOE requests comment on how to address the climate benefits and non-monetized effects of the proposal.

#### 1. Monetization of Greenhouse Gas Emissions

For the purpose of complying with the requirements of Executive Order 12866, DOE estimates the monetized benefits of the reductions in emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O by using a measure of the social cost (“SC”) of each pollutant (*e.g.*, SC–GHGs). These estimates represent the monetary value of the net harm to society associated with a marginal increase in emissions of these pollutants in a given year, or the benefit of avoiding that increase. These estimates are intended to include (but are not limited to) climate-change-related changes in net agricultural productivity, human health, property damages from increased flood risk, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services. DOE exercises its own judgment in presenting monetized climate benefits as recommended by applicable

Executive orders and guidance, and DOE would reach the same conclusion presented in this proposed rulemaking in the absence of the social cost of greenhouse gases, including the February 2021 Interim Estimates presented by the Interagency Working Group on the Social Cost of Greenhouse Gases.

DOE estimated the global social benefits of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O reductions (*i.e.*, SC-GHG) using the estimates presented in the Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990 published in February 2021 by the Interagency Working Group on the Social Cost of Greenhouse Gases (IWG) (IWG, 2021). The SC-GHG is the monetary value of the net harm to society associated with a marginal increase in emissions in a given year, or the benefit of avoiding that increase. In principle, SC-GHG includes the value of all climate change impacts, including (but not limited to) changes in net agricultural productivity, human health effects, property damage from increased flood risk and natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services. The SC-GHG therefore, reflects the societal value of reducing emissions of the gas in question by one metric ton. The SC-GHG is the theoretically appropriate value to use in conducting benefit-cost analyses of policies that affect CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> emissions. As a member of the IWG involved in the development of the February 2021 SC-GHG TSD, the DOE agrees that the interim SC-GHG estimates represent the most appropriate estimate of the SC-GHG until revised estimates have been developed reflecting the latest, peer-reviewed science.

The SC-GHG estimates presented here were developed over many years, using transparent process, peer-reviewed methodologies, the best science available at the time of that process, and with input from the public. Specifically, in 2009, an interagency working group (IWG) that included the DOE and other executive branch agencies and offices was established to ensure that agencies were using the best available science and to promote consistency in the social cost of carbon (SC-CO<sub>2</sub>) values used across agencies. The IWG published SC-CO<sub>2</sub> estimates in 2010 that were developed from an ensemble of three widely cited integrated assessment models (IAMs) that estimate global climate damages using highly aggregated representations of climate processes and the global

economy combined into a single modeling framework. The three IAMs were run using a common set of input assumptions in each model for future population, economic, and CO<sub>2</sub> emissions growth, as well as equilibrium climate sensitivity (ECS)—a measure of the globally averaged temperature response to increased atmospheric CO<sub>2</sub> concentrations. These estimates were updated in 2013 based on new versions of each IAM. In August 2016 the IWG published estimates of the social cost of methane (SC-CH<sub>4</sub>) and nitrous oxide (SC-N<sub>2</sub>O) using methodologies that are consistent with the methodology underlying the SC-CO<sub>2</sub> estimates. The modeling approach that extends the IWG SC-CO<sub>2</sub> methodology to non-CO<sub>2</sub> GHGs has undergone multiple stages of peer review. The SC-CH<sub>4</sub> and SC-N<sub>2</sub>O estimates were developed by Marten et al. (2015) and underwent a standard double-blind peer review process prior to journal publication. In 2015, as part of the response to public comments received to a 2013 solicitation for comments on the SC-CO<sub>2</sub> estimates, the IWG announced a National Academies of Sciences, Engineering, and Medicine review of the SC-CO<sub>2</sub> estimates to offer advice on how to approach future updates to ensure that the estimates continue to reflect the best available science and methodologies. In January 2017, the National Academies released their final report, Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide, and recommended specific criteria for future updates to the SC-CO<sub>2</sub> estimates, a modeling framework to satisfy the specified criteria, and both near-term updates and longer-term research needs pertaining to various components of the estimation process (National Academies, 2017). Shortly thereafter, in March 2017, President Trump issued Executive Order 13783, which disbanded the IWG, withdrew the previous TSDs, and directed agencies to ensure SC-CO<sub>2</sub> estimates used in regulatory analyses are consistent with the guidance contained in OMB's Circular A-4, "including with respect to the consideration of domestic versus international impacts and the consideration of appropriate discount rates" (E.O. 13783, Section 5(c)). Benefit-cost analyses following E.O. 13783 used SC-GHG estimates that attempted to focus on the U.S.-specific share of climate change damages as estimated by the models and were calculated using two discount rates recommended by Circular A-4, 3 percent and 7 percent. All other

methodological decisions and model versions used in SC-GHG calculations remained the same as those used by the IWG in 2010 and 2013, respectively.

On January 20, 2021, President Biden issued Executive Order 13990, which re-established the IWG and directed it to ensure that the U.S. Government's estimates of the social cost of carbon and other greenhouse gases reflect the best available science and the recommendations of the National Academies (2017). The IWG was tasked with first reviewing the SC-GHG estimates currently used in Federal analyses and publishing interim estimates within 30 days of the E.O. that reflect the full impact of GHG emissions, including by taking global damages into account. The interim SC-GHG estimates published in February 2021 are used here to estimate the climate benefits for this proposed rulemaking. The E.O. instructs the IWG to undertake a fuller update of the SC-GHG estimates by January 2022 that takes into consideration the advice of the National Academies (2017) and other recent scientific literature. The February 2021 SC-GHG TSD provides a complete discussion of the IWG's initial review conducted under E.O. 13990. In particular, the IWG found that the SC-GHG estimates used under E.O. 13783 fail to reflect the full impact of GHG emissions in multiple ways.

First, the IWG found that the SC-GHG estimates used under E.O. 13783 fail to fully capture many climate impacts that affect the welfare of U.S. citizens and residents, and those impacts are better reflected by global measures of the SC-GHG. Examples of effects omitted from the E.O. 13783 estimates include direct effects on U.S. citizens, assets, and investments located abroad, supply chains, U.S. military assets and interests abroad, and tourism, and spillover pathways such as economic and political destabilization and global migration that can lead to adverse impacts on U.S. national security, public health, and humanitarian concerns. In addition, assessing the benefits of U.S. GHG mitigation activities requires consideration of how those actions may affect mitigation activities by other countries, as those international mitigation actions will provide a benefit to U.S. citizens and residents by mitigating climate impacts that affect U.S. citizens and residents. A wide range of scientific and economic experts have emphasized the issue of reciprocity as support for considering global damages of GHG emissions. If the United States does not consider impacts on other countries, it is difficult to convince other countries to consider the

impacts of their emissions on the United States. The only way to achieve an efficient allocation of resources for emissions reduction on a global basis—and so benefit the U.S. and its citizens—is for all countries to base their policies on global estimates of damages. As a member of the IWG involved in the development of the February 2021 SC-GHG TSD, DOE agrees with this assessment and, therefore, in this proposed rule DOE centers attention on a global measure of SC-GHG. This approach is the same as that taken in DOE regulatory analyses from 2012 through 2016. A robust estimate of climate damages that accrue only to U.S. citizens and residents does not currently exist in the literature. As explained in the February 2021 TSD, existing estimates are both incomplete and an underestimate of total damages that accrue only to the citizens and residents of the U.S. because they do not fully capture the regional interactions and spillovers discussed above, nor do they include all of the important physical, ecological, and economic impacts of climate change recognized in the climate change literature. As noted in the February 2021 SC-GHG TSD, the IWG will continue to review developments in the literature, including more robust methodologies for estimating a U.S.-specific SC-GHG value, and explore ways to better inform the public of the full range of carbon impacts. As a member of the IWG, DOE will continue to follow developments in the literature pertaining to this issue.

Second, the IWG found that the use of the social rate of return on capital (7 percent under current OMB Circular A-4 guidance) to discount the future benefits of reducing GHG emissions inappropriately underestimates the impacts of climate change for the purposes of estimating the SC-GHG. Consistent with the findings of the National Academies (2017) and the economic literature, the IWG continued to conclude that the consumption rate of interest is the theoretically appropriate discount rate in an intergenerational context (IWG 2010, 2013, 2016a, 2016b), and recommended that discount rate uncertainty and relevant aspects of intergenerational ethical considerations be accounted for in selecting future discount rates. As a member of the IWG involved in the development of the February 2021 SC-GHG TSD, DOE agrees with this assessment and will continue to follow developments in the literature pertaining to this issue.

Furthermore, the damage estimates developed for use in the SC-GHG are estimated in consumption-equivalent terms, and so an application of OMB

Circular A-4's guidance for regulatory analysis would then use the consumption discount rate to calculate the SC-GHG. DOE agrees with this assessment and will continue to follow developments in the literature pertaining to this issue. DOE also notes that while OMB Circular A-4, as published in 2003, recommends using 3% and 7% discount rates as "default" values, Circular A-4 also reminds agencies that "different regulations may call for different emphases in the analysis, depending on the nature and complexity of the regulatory issues and the sensitivity of the benefit and cost estimates to the key assumptions." On discounting, Circular A-4 recognizes that "special ethical considerations arise when comparing benefits and costs across generations," and Circular A-4 acknowledges that analyses may appropriately "discount future costs and consumption benefits . . . at a lower rate than for intragenerational analysis." In the 2015 Response to Comments on the Social Cost of Carbon for Regulatory Impact Analysis, OMB, DOE, and the other IWG members recognized that "Circular A-4 is a living document" and "the use of 7 percent is not considered appropriate for intergenerational discounting. There is wide support for this view in the academic literature, and it is recognized in Circular A-4 itself." Thus, DOE concludes that a 7% discount rate is not appropriate to apply to value the social cost of greenhouse gases in the analysis presented in this analysis. In this analysis, to calculate the present and annualized values of climate benefits, DOE uses the same discount rate as the rate used to discount the value of damages from future GHG emissions, for internal consistency. That approach to discounting follows the same approach that the February 2021 TSD recommends "to ensure internal consistency—*i.e.*, future damages from climate change using the SC-GHG at 2.5 percent should be discounted to the base year of the analysis using the same 2.5 percent rate." DOE has also consulted the National Academies' 2017 recommendations on how SC-GHG estimates can "be combined in RIAs with other cost and benefits estimates that may use different discount rates." The National Academies reviewed "several options," including "presenting all discount rate combinations of other costs and benefits with [SC-GHG] estimates."

While the IWG works to assess how best to incorporate the latest, peer reviewed science to develop an updated set of SC-GHG estimates, it set the

interim estimates to be the most recent estimates developed by the IWG prior to the group being disbanded in 2017. The estimates rely on the same models and harmonized inputs and are calculated using a range of discount rates. As explained in the February 2021 SC-GHG TSD, the IWG has recommended that agencies to revert to the same set of four values drawn from the SC-GHG distributions based on three discount rates as were used in regulatory analyses between 2010 and 2016 and subject to public comment. For each discount rate, the IWG combined the distributions across models and socioeconomic emissions scenarios (applying equal weight to each) and then selected a set of four values recommended for use in benefit-cost analyses: an average value resulting from the model runs for each of three discount rates (2.5 percent, 3 percent, and 5 percent), plus a fourth value, selected as the 95th percentile of estimates based on a 3 percent discount rate. The fourth value was included to provide information on potentially higher-than-expected economic impacts from climate change. As explained in the February 2021 SC-GHG TSD, and DOE agrees, this update reflects the immediate need to have an operational SC-GHG for use in regulatory benefit-cost analyses and other applications that was developed using a transparent process, peer-reviewed methodologies, and the science available at the time of that process. Those estimates were subject to public comment in the context of dozens of proposed rulemakings as well as in a dedicated public comment period in 2013.

There are a number of limitations and uncertainties associated with the SC-GHG estimates. First, the current scientific and economic understanding of discounting approaches suggests discount rates appropriate for intergenerational analysis in the context of climate change are likely to be less than 3 percent, near 2 percent or lower. Second, the IAMs used to produce these interim estimates do not include all of the important physical, ecological, and economic impacts of climate change recognized in the climate change literature and the science underlying their "damage functions"—*i.e.*, the core parts of the IAMs that map global mean temperature changes and other physical impacts of climate change into economic (both market and nonmarket) damages—lags behind the most recent research. For example, limitations include the incomplete treatment of catastrophic and non-catastrophic impacts in the integrated assessment models, their incomplete treatment of

adaptation and technological change, the incomplete way in which inter-regional and intersectoral linkages are modeled, uncertainty in the extrapolation of damages to high temperatures, and inadequate representation of the relationship between the discount rate and uncertainty in economic growth over long time horizons. Likewise, the socioeconomic and emissions scenarios used as inputs to the models do not reflect new information from the last decade of scenario generation or the full range of projections. The modeling limitations do not all work in the same

direction in terms of their influence on the SC-CO<sub>2</sub> estimates. However, as discussed in the February 2021 TSD, the IWG has recommended that, taken together, the limitations suggest that the interim SC-GHG estimates used in this final rule likely underestimate the damages from GHG emissions. DOE concurs with this assessment.

DOE's derivations of the SC-GHG (i.e., SC-CO<sub>2</sub>, SC-N<sub>2</sub>O, and SC-CH<sub>4</sub>) values used for this NOPR are discussed in the following sections, and the results of DOE's analyses estimating the benefits of the reductions in emissions of these pollutants are presented in section V.B.6 of this document.

a. Social Cost of Carbon

The SC-CO<sub>2</sub> values used for this NOPR were generated using the values presented in the 2021 update from the IWG's February 2021 TSD. Table IV.19 shows the updated sets of SC-CO<sub>2</sub> estimates from the latest interagency update in 5-year increments from 2020 to 2050. The full set of annual values used is presented in Appendix 14A of the NOPR TSD. For purposes of capturing the uncertainties involved in regulatory impact analysis, DOE has determined it is appropriate to include all four sets of SC-CO<sub>2</sub> values, as recommended by the IWG.<sup>96</sup>

TABLE IV.19—ANNUAL SC-CO<sub>2</sub> VALUES FROM 2021 INTERAGENCY UPDATE, 2020–2070 [2020\$ per metric ton CO<sub>2</sub>]

Discount rate and statistics				
Emissions year	5%, average	3%, average	2.5%, average	3%, 95th percentile
2020	14	51	76	151
2025	17	56	83	169
2030	19	62	89	186
2035	22	67	96	205
2040	25	73	103	224
2045	28	79	109	242
2050	32	84	116	259
2055	35	89	122	265
2060	38	93	128	275
2065	44	100	135	300
2070	49	108	143	326

The SC-CO<sub>2</sub> values used for this NOPR were based on the values presented in the 2021 update from the IWG's February 2021 SC-GHG TSD. For 2051 to 2070, DOE used estimates published by EPA, adjusted to 2021\$.<sup>97</sup> These estimates are based on methods, assumptions, and parameters identical to the 2020–2050 estimates published by the IWG. DOE expects additional climate benefits to accrue for any longer-life transformers post 2070, but a lack of available SC-CO<sub>2</sub> estimates for emissions years beyond 2070 prevents DOE from monetizing these potential benefits in this analysis. If further analysis of monetized climate benefits

beyond 2070 becomes available prior to the publication of the final rule, DOE will include that analysis in the final rule. DOE multiplied the CO<sub>2</sub> emissions reduction estimated for each year by the SC-CO<sub>2</sub> value for that year in each of the four cases. To calculate a present value of the stream of monetary values, DOE discounted the values in each of the four cases using the specific discount rate that had been used to obtain the SC-CO<sub>2</sub> values in each case.

b. Social Cost of Methane and Nitrous Oxide

The SC-CH<sub>4</sub> and SC-N<sub>2</sub>O values used for this NOPR were generated using the

values presented in the February 2021 TSD. Table IV.20 shows the updated sets of SC-CH<sub>4</sub> and SC-N<sub>2</sub>O estimates from the latest interagency update in 5-year increments from 2020 to 2050. The full set of annual values used is presented in Appendix 14A of the NOPR TSD. To capture the uncertainties involved in regulatory impact analysis, DOE has determined it is appropriate to include all four sets of SC-CH<sub>4</sub> and SC-N<sub>2</sub>O values, as recommended by the IWG.

TABLE IV.20—ANNUAL SC-CH<sub>4</sub> AND SC-N<sub>2</sub>O VALUES FROM 2021 INTERAGENCY UPDATE, 2020–2070 [2020\$ per metric ton]

Year	SC-CH <sub>4</sub> —discount rate and statistic				SC-N <sub>2</sub> O—discount rate and statistic			
	5%	3%	2.5%	3%	5%	3%	2.5%	3%
	Average	Average	Average	95th percentile	Average	Average	Average	95th percentile
2020	663	1,480	1,946	3,893	5,760	18,342	27,037	48,090

<sup>96</sup> For example, the February 2021 TSD discusses how the understanding of discounting approaches suggests that discount rates appropriate for

intergenerational analysis in the context of climate change may be lower than 3 percent.

<sup>97</sup> See EPA, *Revised 2023 and Later Model Year Light-Duty Vehicle GHG Emissions Standards*:

*Regulatory Impact Analysis*, Washington, DC, December 2021. Available at: [www.epa.gov/system/files/documents/2021-12/420r21028.pdf](http://www.epa.gov/system/files/documents/2021-12/420r21028.pdf) (last accessed January 13, 2022).

TABLE IV.20—ANNUAL SC—CH<sub>4</sub> AND SC—N<sub>2</sub>O VALUES FROM 2021 INTERAGENCY UPDATE, 2020–2070—Continued  
[2020\$ per metric ton]

Year	SC—CH <sub>4</sub> —discount rate and statistic				SC—N <sub>2</sub> O—discount rate and statistic			
	5%	3%	2.5%	3%	5%	3%	2.5%	3%
	Average	Average	Average	95th percentile	Average	Average	Average	95th percentile
2025 .....	799	1,714	2,223	4,533	6,766	20,520	29,811	54,108
2030 .....	935	1,948	2,499	5,173	7,772	22,698	32,585	60,125
2035 .....	1,106	2,224	2,817	5,939	9,007	25,149	35,632	66,898
2040 .....	1,277	2,500	3,136	6,705	10,241	27,600	38,678	73,670
2045 .....	1,464	2,778	3,450	7,426	11,687	30,238	41,888	80,766
2050 .....	1,651	3,057	3,763	8,147	13,133	32,875	45,098	87,863
2055 .....	1,772	3,221	3,942	8,332	14,758	35,539	48,236	94,117
2060 .....	1,899	3,395	4,130	8,539	16,424	38,300	51,507	100,845
2065 .....	2,508	4,163	4,960	11,177	19,687	42,625	56,397	115,590
2070 .....	3,130	4,976	5,867	14,079	23,018	47,072	61,428	130,928

DOE multiplied the CH<sub>4</sub> and N<sub>2</sub>O emissions reduction estimated for each year by the SC—CH<sub>4</sub> and SC—N<sub>2</sub>O estimates for that year in each of the cases. To calculate a present value of the stream of monetary values, DOE discounted the values in each of the cases using the specific discount rate that had been used to obtain the SC—CH<sub>4</sub> and SC—N<sub>2</sub>O estimates in each case.

2. Monetization of Other Emissions Impacts

For the NOPR, DOE estimated the monetized value of NO<sub>x</sub> and SO<sub>2</sub> emissions reductions from electricity generation using the latest benefit per ton estimates for that sector from the EPA’s Benefits Mapping and Analysis Program.<sup>98</sup> DOE used EPA’s values for PM<sub>2.5</sub>-related benefits associated with NO<sub>x</sub> and SO<sub>2</sub> and for ozone-related benefits associated with NO<sub>x</sub> for 2025, 2030, and 2040, calculated with discount rates of 3 percent and 7 percent. DOE used linear interpolation to define values for the years not given in the 2025 to 2040 period; for years beyond 2040 the values are held constant. DOE derived values specific to the sector for distribution transformer using a method described in appendix 14B of the NOPR TSD.

DOE multiplied the site emissions reduction (in tons) in each year by the associated \$/ton values, and then discounted each series using discount rates of 3 percent and 7 percent as appropriate.

M. Utility Impact Analysis

The utility impact analysis estimates several effects on the electric power generation industry that would result from the adoption of new or amended

energy conservation standards. The utility impact analysis estimates the changes in installed electrical capacity and generation that would result for each TSL. The analysis is based on published output from the NEMS associated with AEO2022. NEMS produces the AEO Reference case, as well as a number of side cases that estimate the economy-wide impacts of changes to energy supply and demand. For the current analysis, impacts are quantified by comparing the levels of electricity sector generation, installed capacity, fuel consumption and emissions in the AEO2022 Reference case and various side cases. Details of the methodology are provided in the appendices to chapters 13 and 15 of the NOPR TSD.

The output of this analysis is a set of time-dependent coefficients that capture the change in electricity generation, primary fuel consumption, installed capacity and power sector emissions due to a unit reduction in demand for a given end use. These coefficients are multiplied by the stream of electricity savings calculated in the NIA to provide estimates of selected utility impacts of potential new or amended energy conservation standards.

N. Employment Impact Analysis

DOE considers employment impacts in the domestic economy as one factor in selecting a proposed standard. Employment impacts from new or amended energy conservation standards include both direct and indirect impacts. Direct employment impacts are any changes in the number of employees of manufacturers of the products subject to standards, their suppliers, and related service firms. The MIA addresses those impacts. Indirect employment impacts are changes in national employment that occur due to the shift in expenditures and capital

investment caused by the purchase and operation of more-efficient appliances. Indirect employment impacts from standards consist of the net jobs created or eliminated in the national economy, other than in the manufacturing sector being regulated, caused by (1) reduced spending by consumers on energy, (2) reduced spending on new energy supply by the utility industry, (3) increased consumer spending on the products to which the new standards apply and other goods and services, and (4) the effects of those three factors throughout the economy.

One method for assessing the possible effects on the demand for labor of such shifts in economic activity is to compare sector employment statistics developed by the Labor Department’s Bureau of Labor Statistics (“BLS”). BLS regularly publishes its estimates of the number of jobs per million dollars of economic activity in different sectors of the economy, as well as the jobs created elsewhere in the economy by this same economic activity. Data from BLS indicate that expenditures in the utility sector generally create fewer jobs (both directly and indirectly) than expenditures in other sectors of the economy.<sup>99</sup> There are many reasons for these differences, including wage differences and the fact that the utility sector is more capital-intensive and less labor-intensive than other sectors. Energy conservation standards have the effect of reducing consumer utility bills. Because reduced consumer expenditures for energy likely lead to increased expenditures in other sectors of the economy, the general effect of

<sup>98</sup> Estimating the Benefit per Ton of Reducing PM<sub>2.5</sub> Precursors from 21 Sectors. [www.epa.gov/benmap/estimating-benefit-ton-reducing-pm25-precursors-21-sectors](http://www.epa.gov/benmap/estimating-benefit-ton-reducing-pm25-precursors-21-sectors).

<sup>99</sup> See U.S. Department of Commerce—Bureau of Economic Analysis. *Regional Multipliers: A User Handbook for the Regional Input-Output Modeling System (RIMS II)*. 1997. U.S. Government Printing Office: Washington, DC. Available at [apps.bea.gov/scb/pdf/regional/perinc/meth/rims2.pdf](https://apps.bea.gov/scb/pdf/regional/perinc/meth/rims2.pdf) (last accessed June 1, 2022).

efficiency standards is to shift economic activity from a less labor-intensive sector (*i.e.*, the utility sector) to more labor-intensive sectors (*e.g.*, the retail and service sectors). Thus, the BLS data suggest that net national employment may increase due to shifts in economic activity resulting from energy conservation standards.

DOE estimated indirect national employment impacts for the standard levels considered in this NOPR using an input/output model of the U.S. economy called Impact of Sector Energy Technologies version 4 (“ImSET”).<sup>100</sup> ImSET is a special-purpose version of the “U.S. Benchmark National Input-Output” (“I-O”) model, which was designed to estimate the national employment and income effects of energy-saving technologies. The ImSET software includes a computer-based I-O model having structural coefficients that characterize economic flows among 187 sectors most relevant to industrial, commercial, and residential building energy use.

DOE notes that ImSET is not a general equilibrium forecasting model, and that the uncertainties involved in projecting employment impacts, especially changes in the later years of the analysis. Because ImSET does not incorporate price changes, the employment effects predicted by ImSET may over-estimate actual job impacts over the long run for this rule. Therefore, DOE used ImSET only to generate results for near-term timeframes (2031), where these uncertainties are reduced. For more details on the employment impact analysis, see chapter 16 of the NOPR TSD.

**V. Analytical Results and Conclusions**

The following section addresses the results from DOE’s analyses with respect to the considered energy conservation standards for distribution transformers. It addresses the TSLs examined by DOE, the projected impacts of each of these levels if adopted as energy conservation standards for distribution transformers, and the standards levels that DOE is

proposing to adopt in this NOPR. Additional details regarding DOE’s analyses are contained in the NOPR TSD supporting this document.

*A. Trial Standard Levels*

In general, DOE typically evaluates potential amended standards for products and equipment by grouping individual efficiency levels for each class into TSLs. Use of TSLs allows DOE to identify and consider manufacturer cost interactions between the equipment classes, to the extent that there are such interactions, and market cross elasticity from consumer purchasing decisions that may change when different standard levels are set. DOE presents the results for the TSLs in this document, while the results for all efficiency levels that DOE analyzed are in the NOPR TSD.

In the analysis conducted for this NOPR, DOE analyzed the benefits and burdens of five TSLs for distribution transformers. DOE developed TSLs that combine efficiency levels for each analyzed representative unit and their respective equipment classes. For this NOPR, DOE defined its efficiency levels as a percentage reduction in baseline losses (see section IV.F.2). To create TSLs, DOE maintained this approach and directly mapped ELs to TSLs, with the exception of liquid-immersed submersible distribution transformers which remain at baseline for all TSLs except max-tech. For submersible distribution transformers, being able to fit in an existing vault is a consumer feature of significant utility and these transformers often serve high density applications. DOE recognizes that beyond some size increase a vault replacement may be necessary, however, DOE lacks sufficient data as to where exactly that vault replacement is needed. In order to maintain the consumer utility associated with submersible transformers, DOE has taken the conservative approach of not considering TSLs for submersible transformers aside from max-tech. DOE presents the results for the TSLs in this document, while the results for all

efficiency levels that DOE analyzed are in the NOPR TSD.

Table V.1 presents the TSLs and the corresponding efficiency levels that DOE has identified for potential amended energy conservation standards for distribution transformers. TSL 5 represents the maximum technologically feasible (“max-tech”) energy efficiency for all product classes. TSL 4 represents a loss reduction over baseline of 20 percent for liquid-immersed transformers, except submersible liquid-immersed transformers which remain at baseline; a 40 and 30 percent reduction in baseline losses for single-, and three-phase low-voltage distribution transformers, respectively; and a 30 percent reduction in baseline losses for all medium-voltage dry-type distribution transformers. TSL 3 represents a loss reduction over baseline of 10 percent for liquid-immersed transformers, except submersible liquid-immersed transformers which remain at baseline; a 30 and 20 percent reduction in baseline losses for single-, and three-phase low-voltage distribution transformers, respectively; and a 20 percent reduction in baseline losses for all medium-voltage dry-type distribution transformers. TSL 2 represents a loss reduction over baseline of 5 percent for liquid-immersed transformers, except submersible liquid-immersed transformers which remain at baseline; a 20 and 10 percent reduction in baseline losses for single-, and three-phase low-voltage distribution transformers, respectively; and a 10 percent reduction in baseline losses for all medium-voltage dry-type distribution transformers. TSL 1 represents a loss reduction over baseline of 2.5 percent for liquid-immersed transformers, except submersible liquid-immersed transformers which remain at baseline; a 10 and 5 percent reduction in baseline losses for single-, and three-phase low-voltage distribution transformers, respectively; and a 5 percent reduction in baseline losses for all medium-voltage dry-type distribution transformers.

TABLE V.1—EFFICIENCY LEVEL TO TRIAL STANDARD LEVEL MAPPING FOR DISTRIBUTION TRANSFORMERS

Equipment type	EC	RU	Phases	BIL	Trial standard level				
					1	2	3	4	5
Liquid-immersed .....	1	1	1	All .....	1	2	3	4	5
	1	2	1	All .....	1	2	3	4	5
	1	3	1	All .....	1	2	3	4	5
	2	4	3	All .....	1	2	3	4	5

<sup>100</sup> Livingston, O.V., S.R. Bender, M.J. Scott, and R.W. Schultz. *ImSET 4.0: Impact of Sector Energy*

*Technologies Model Description and User Guide.*

2015. Pacific Northwest National Laboratory: Richland, WA. PNNL-24563.



TABLE V.1—EFFICIENCY LEVEL TO TRIAL STANDARD LEVEL MAPPING FOR DISTRIBUTION TRANSFORMERS—Continued

Equipment type	EC	RU	Phases	BIL	Trial standard level				
					1	2	3	4	5
Low-voltage Dry-type .....	2	5	3	All .....	1	2	3	4	5
	2	17	3	All .....	1	2	3	4	5
	12	15	3	All .....	0	0	0	0	5
	12	16	3	All .....	0	0	0	0	5
	3	6	1	All .....	1	2	3	4	5
Medium-voltage Dry-type ..	4	7	3	All .....	1	2	3	4	5
	4	8	3	All .....	1	2	3	4	5
	5	*9V	1	<46 kV .....	1	2	3	4	5
	5	10V	1	<46 kV .....	1	2	3	4	5
	6	9	3	<46 kV .....	1	2	3	4	5
	6	10	3	<46 kV .....	1	2	3	4	5
	7	11V	1	≥46 and <96 kV .....	1	2	3	4	5
	7	12V	1	≥46 and <96 kV .....	1	2	3	4	5
	8	11	3	≥46 and <96 kV .....	1	2	3	4	5
	8	12	3	≥46 and <96 kV .....	1	2	3	4	5
	8	18	3	≥46 and <96 kV .....	1	2	3	4	5
	9	13V	1	≥96 kV .....	1	2	3	4	5
	9	14V	1	≥96 kV .....	1	2	3	4	5
	10	13	3	≥96 kV .....	1	2	3	4	5
	10	14	3	≥96 kV .....	1	2	3	4	5
10	19	3	≥96 kV .....	1	2	3	4	5	

DOE constructed the TSLs for this NOPR to include ELs representative of ELs with similar characteristics (*i.e.*, using similar technologies and/or efficiencies, and having roughly comparable equipment availability). The use of representative ELs provided for greater distinction between the TSLs. While representative ELs were included in the TSLs, DOE considered all efficiency levels as part of its analysis.<sup>101</sup>

*B. Economic Justification and Energy Savings*

1. Economic Impacts on Individual Consumers

DOE analyzed the economic impacts on distribution transformers consumers

by looking at the effects that potential amended standards at each TSL would have on the LCC and PBP. DOE also examined the impacts of potential standards on selected consumer subgroups. These analyses are discussed in the following sections.

a. Life-Cycle Cost and Payback Period

In general, higher-efficiency products affect consumers in two ways: (1) purchase price increases and (2) annual operating costs decrease. Inputs used for calculating the LCC and PBP include total installed costs (*i.e.*, product price plus installation costs), and operating costs (*i.e.*, annual energy use, energy prices, energy price trends, repair costs, and maintenance costs). The LCC calculation also uses product lifetime

and a discount rate. Because some consumers purchase products with higher efficiency in the no-new-standards case, the average savings are less than the difference between the average LCC of the baseline product and the average LCC at each TSL. The savings refer only to consumers who are affected by a standard at a given TSL. Those who already purchase a product with efficiency at or above a given TSL are not affected. Consumers for whom the LCC increases at a given TSL experience a net cost. Chapter 8 of the NOPR TSD provides detailed information on the LCC and PBP analyses.

Liquid-Immersed Distribution Transformers

TABLE V.2—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 1

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	2,917	67	1,346	4,263	.....	31.9
1 .....	2,983	66	1,328	4,311	86.7	31.9
2 .....	3,073	65	1,299	4,373	73.0	31.9
3 .....	3,294	48	969	4,263	19.2	31.9
4 .....	3,279	45	913	4,192	16.0	31.9
5 .....	4,080	39	778	4,859	40.9	31.9

Rep unit 1 represents 20.3 percent of liquid-immersed distribution transformers units shipped, and 21.8 percent of shipments for equipment class 1 (single phase liquid-immersed).

<sup>101</sup> Efficiency levels that were analyzed for this NOPR are discussed in section IV.F.2 of this

document. Results by efficiency level are presented in TSD chapters 8, 10, and 12.

TABLE V.3—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 1

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$ *
1 .....	68.8	– 53
2 .....	85.5	– 114
3 .....	47.4	0
4 .....	33.7	72
5 .....	95.6	– 599

Rep unit 1 represents 20.3 percent of liquid-immersed distribution transformers units shipped, and 21.8 percent of shipments for equipment class 1 (single phase liquid-immersed).

\* The savings represent the average LCC for affected consumers.

TABLE V.4—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 2

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	1,805	41	818	2,623	.....	31.9
1 .....	1,805	33	673	2,478	0.1	31.9
2 .....	1,810	30	613	2,423	0.5	31.9
3 .....	1,857	29	580	2,437	4.1	31.9
4 .....	1,951	27	541	2,492	10.1	31.9
5 .....	2,347	23	452	2,799	29.1	31.9

Rep unit 2 represents 72.7 percent of liquid-immersed distribution transformers units shipped, and 78.0 percent of shipments for equipment class 1 (single phase liquid-immersed).

TABLE V.5—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 2

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$ *
1 .....	21.9	146
2 .....	9.6	201
3 .....	9.3	186
4 .....	13.3	131
5 .....	84.3	– 176

Rep unit 2 represents 72.7 percent of liquid-immersed distribution transformers units shipped, and 78.0 percent of shipments for equipment class 1 (single phase liquid-immersed).

\* The savings represent the average LCC for affected consumers.

TABLE V.6—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 3

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	10,728	427	8,523	19,251	.....	31.8
1 .....	11,269	335	6,900	18,169	5.9	31.8
2 .....	11,304	323	6,668	17,972	5.6	31.8
3 .....	11,754	305	6,284	18,038	8.4	31.8
4 .....	12,568	275	5,656	18,225	12.2	31.8
5 .....	14,920	234	4,744	19,664	21.8	31.8

Rep unit 3 represents 0.2 percent of liquid-immersed distribution transformers units shipped, and 0.2 percent of shipments for equipment class 1 (single phase liquid-immersed).

TABLE V.7—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 3

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$ *
1 .....	27.9	1,121
2 .....	22.2	1,312
3 .....	23.3	1,216

TABLE V.7—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 3—  
Continued

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$*
4 .....	22.5	1,029
5 .....	64.5	-414

Rep unit 3 represents 0.2 percent of liquid-immersed distribution transformers units shipped, and 0.2 percent of shipments for equipment class 1 (single phase liquid-immersed).  
\* The savings represent the average LCC for affected consumers.

TABLE V.8—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 4

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	10,319	196	3,913	14,232	.....	32.0
1 .....	10,403	193	3,846	14,249	25.8	32.0
2 .....	10,596	184	3,689	14,285	24.1	32.0
3 .....	11,095	137	2,768	13,863	13.1	32.0
4 .....	11,120	129	2,616	13,736	11.9	32.0
5 .....	11,798	117	2,359	14,156	18.7	32.0

Rep unit 4 represents 4.6 percent of liquid-immersed distribution transformers units shipped, and 68.0 percent of shipments for equipment class 2 (three phase liquid-immersed).

TABLE V.9—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 4

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$*
1 .....	38.2	-26
2 .....	66.6	-55
3 .....	24.8	381
4 .....	12.9	511
5 .....	48.9	77

Rep unit 4 represents 4.6 percent of liquid-immersed distribution transformers units shipped, and 68.0 percent of shipments for equipment class 2 (three phase liquid-immersed).

\* The savings represent the average LCC for affected consumers.

TABLE V.10—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 5

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	35,245	1,195	23,754	58,999	.....	31.7
1 .....	36,431	1,079	21,647	58,078	10.2	31.7
2 .....	36,603	1,006	20,349	56,952	7.2	31.7
3 .....	37,550	966	19,573	57,123	10.0	31.7
4 .....	39,455	891	18,002	57,457	13.8	31.7
5 .....	52,032	744	14,880	66,912	37.2	31.7

Rep unit 5 represents 2.1 percent of liquid-immersed distribution transformers units shipped, and 31.5 percent of shipments for equipment class 2 (three phase liquid-immersed).

TABLE V.11—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 5

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$*
1 .....	41.0	986
2 .....	26.7	2,095
3 .....	28.7	1,888
4 .....	28.5	1,543

TABLE V.11—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 5—Continued

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$ *
5 .....	95.8	–7,913

Rep unit 5 represents 2.1 percent of liquid-immersed distribution transformers units shipped, and 31.5 percent of shipments for equipment class 2 (three phase liquid-immersed).

\* The savings represent the average LCC for affected consumers.

TABLE V.12—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 15

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	10,749	196	3,919	14,668	.....	32.0
1 .....	10,833	193	3,855	14,687	26.3	32.0
2 .....	11,026	185	3,700	14,727	24.5	32.0
3 .....	11,523	137	2,778	14,301	13.1	32.0
4 .....	11,548	129	2,628	14,176	12.0	32.0
5 .....	12,228	117	2,367	14,595	18.8	32.0

Rep unit 15 represents <0.1 percent of liquid-immersed distribution transformers units shipped, and 0.4 percent of equipment class 12 shipments.

TABLE V.13—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 15

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$ *
1 .....	38.3	–30
2 .....	67.3	–61
3 .....	24.5	379
4 .....	12.8	507
5 .....	49.4	74

Rep unit 15 represents <0.1 percent of liquid-immersed distribution transformers units shipped, and 0.4 percent of shipments for equipment class 12 (three phase liquid-immersed submersible).

\* The savings represent the average LCC for affected consumers.

TABLE V.14—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 16

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	35,814	1,255	25,345	61,159	.....	32.1
1 .....	37,015	1,146	23,365	60,380	11.0	32.1
2 .....	37,183	1,085	22,313	59,496	8.0	32.1
3 .....	38,135	1,045	21,549	59,684	11.1	32.1
4 .....	40,044	961	19,748	59,791	14.4	32.1
5 .....	52,622	789	16,044	68,666	36.1	32.1

Rep unit 16 represents 0.1 percent of liquid-immersed distribution transformers units shipped, and 99.6 percent of shipments for equipment class 12 (three phase liquid-immersed submersible).

TABLE V.15—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 16

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$ *
1 .....	42.0	829
2 .....	28.9	1,700
3 .....	32.3	1,482
4 .....	29.5	1,368

TABLE V.15—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 16—Continued

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021\$) *
5 .....	95.1	-7,509

Rep unit 16 represents 0.1 percent of liquid-immersed distribution transformers units shipped, and 99.6 percent of shipments for equipment class 12 (three phase liquid-immersed submersible).  
 \* The savings represent the average LCC for affected consumers.

TABLE V.16—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 17

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	55,256	3,485	71,294	126,550	.....	32.1
1 .....	70,709	2,485	50,618	121,327	15.5	32.1
2 .....	72,775	2,283	47,047	119,822	14.6	32.1
3 .....	74,623	2,208	45,574	120,197	15.2	32.1
4 .....	78,307	2,028	41,715	120,023	15.8	32.1
5 .....	102,728	1,650	33,556	136,283	25.9	32.1

Rep unit 17 represents <0.1 percent of liquid-immersed distribution transformers units shipped, and 0.5 percent of shipments for equipment class 2 (three phase liquid-immersed).

TABLE V.17—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 17

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021\$) *
1 .....	42.8	5,346
2 .....	34.2	6,873
3 .....	36.8	6,472
4 .....	41.5	6,594
5 .....	73.9	-9,755

Rep unit 17 represents <0.1 percent of liquid-immersed distribution transformers units shipped, and 0.5 percent of shipments for equipment class 2 (three phase liquid-immersed).  
 \* The savings represent the average LCC for affected consumers.

Low-Voltage Dry-Type Distribution Transformers

TABLE V.18—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 6

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	1,737	97	1,424	3,161	.....	31.9
1 .....	1,735	90	1,327	3,063	0.0	31.9
2 .....	1,783	83	1,220	3,003	3.3	31.9
3 .....	1,890	77	1,127	3,017	7.6	31.9
4 .....	2,144	62	908	3,053	11.7	31.9
5 .....	2,311	48	703	3,014	11.7	31.9

Rep unit 6 represents 9.3 percent of low-voltage dry-type distribution transformers units shipped, and 100.0 percent of shipments for equipment class 3 (single phase low-voltage dry-type).

TABLE V.19—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 6

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021\$) *
1 .....	1	312

TABLE V.19—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 6—Continued

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021\$) *
2 .....	17	203
3 .....	33	146
4 .....	43	108
5 .....	40	147

\* The savings represent the average LCC for affected consumers.

Rep unit 6 represents 9.3 percent of low-voltage dry-type distribution transformers units shipped, and 100.0 percent of shipments for equipment class 3 (single phase low-voltage dry-type).

TABLE V.20—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 7

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	3,974	228	3,366	7,340	.....	32.1
1 .....	3,929	211	3,114	7,043	0.0	32.1
2 .....	3,920	206	3,029	6,950	0.0	32.1
3 .....	4,266	193	2,842	7,108	8.2	32.1
4 .....	4,621	143	2,102	6,723	7.5	32.1
5 .....	4,829	132	1,947	6,776	8.9	32.1

Rep unit 7 represents 84.9 percent of low-voltage dry-type distribution transformers units shipped, and 93.6 percent of shipments for equipment class 4 (three phase low-voltage dry-type).

TABLE V.21—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 7

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021\$) *
1 .....	8	357
2 .....	7	397
3 .....	28	233
4 .....	9	617
5 .....	15	564

\* The savings represent the average LCC for affected consumers.

Rep unit 7 represents 84.9 percent of low-voltage dry-type distribution transformers units shipped, and 93.6 percent of shipments for equipment class 4 (three phase low-voltage dry-type).

TABLE V.22—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 8

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	9,252	632	9,207	18,459	.....	32.0
1 .....	9,348	613	8,937	18,285	5.2	32.0
2 .....	9,746	588	8,570	18,316	11.3	32.0
3 .....	10,620	542	7,898	18,517	15.2	32.0
4 .....	12,297	373	5,439	17,737	11.8	32.0
5 .....	12,297	373	5,439	17,737	11.8	32.0

Rep unit 8 represents 5.8 percent of low-voltage dry-type distribution transformers units shipped, and 6.4 percent of shipments for equipment class 4 (three phase low-voltage dry-type).

TABLE V.23—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 8

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021\$) *
1 .....	12	355
2 .....	41	152

TABLE V.23—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 8—Continued

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$*
3 .....	57	– 58
4 .....	31	722
5 .....	31	722

\* The savings represent the average LCC for affected consumers.

Rep unit 8 represents 5.8 percent of low-voltage dry-type distribution transformers units shipped, and 6.4 percent of shipments for equipment class 4 (three phase low-voltage dry-type).

Medium-Voltage Dry-Type Distribution Transformers

TABLE V.24—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 9

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	14,830	918	13,450	28,281	.....	32.1
1 .....	14,874	895	13,115	27,990	2.0	32.1
2 .....	14,961	862	12,628	27,589	2.4	32.1
3 .....	15,984	800	11,725	27,709	9.8	32.1
4 .....	17,981	726	10,639	28,620	16.4	32.1
5 .....	19,047	602	8,823	27,870	13.4	32.1

Rep unit 9 represents 7.3 percent of medium-voltage dry-type distribution transformers units shipped, and 77.0 percent of shipments for equipment class 6 (three phase medium-voltage dry-type, 20–45 kV BIL).

TABLE V.25—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 9

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$*
1 .....	4	1,039
2 .....	10	887
3 .....	39	571
4 .....	64	– 339
5 .....	49	410

\* The savings represent the average LCC for affected consumers.

Rep unit 9 represents 7.3 percent of medium-voltage dry-type distribution transformers units shipped, and 77.0 percent of shipments for equipment class 6 (three phase medium-voltage dry-type, 20–45 kV BIL).

TABLE V.26—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 10

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	45,167	2,799	41,003	86,169	.....	32.0
1 .....	45,363	2,674	39,185	84,548	1.6	32.0
2 .....	47,461	2,597	38,056	85,516	11.4	32.0
3 .....	55,429	2,276	33,366	88,794	19.7	32.0
4 .....	59,426	2,039	29,887	89,313	18.8	32.0
5 .....	67,353	1,838	26,950	94,303	23.1	32.0

Rep unit 10 represents 2.2 percent of medium-voltage dry-type distribution transformers units shipped, and 23.0 percent of shipments for equipment class 6 (three phase medium-voltage dry-type, 20–45 kV BIL).

TABLE V.27—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 10

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$ *
1 .....	15	1,854
2 .....	38	653
3 .....	78	-2,625
4 .....	81	-3,144
5 .....	91	-8,133

\* The savings represent the average LCC for affected consumers.

Rep unit 10 represents 2.2 percent of medium-voltage dry-type distribution transformers units shipped, and 23.0 percent of shipments for equipment class 6 (three phase medium-voltage dry-type, 20–45 kV BIL).

TABLE V.28—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 11

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	20,788	1,190	17,353	38,141	.....	32.0
1 .....	20,948	1,156	16,859	37,807	4.7	32.0
2 .....	21,792	1,106	16,123	37,915	11.9	32.0
3 .....	23,458	951	13,870	37,328	11.2	32.0
4 .....	23,880	859	12,516	36,396	9.3	32.0
5 .....	25,903	769	11,216	37,119	12.2	32.0

Rep unit 11 represents 2.6 percent of medium-voltage dry-type distribution transformers units shipped, and 6.6 percent of shipments for equipment class 8 (three phase medium-voltage dry-type, 45–95 kV BIL).

TABLE V.29—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 11

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$ *
1 .....	26	438
2 .....	46	226
3 .....	35	813
4 .....	15	1,744
5 .....	38	1,021

\* The savings represent the average LCC for affected consumers.

Rep unit 11 represents 2.6 percent of medium-voltage dry-type distribution transformers units shipped, and 6.6 percent of shipments for equipment class 8 (three phase medium-voltage dry-type, 45–95 kV BIL).

TABLE V.30—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 12

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	54,830	3,290	47,795	102,625	.....	32.0
1 .....	52,818	3,138	45,595	98,413	0.0	32.0
2 .....	55,069	3,063	44,505	99,574	1.1	32.0
3 .....	63,490	2,659	38,639	102,129	13.7	32.0
4 .....	67,333	2,430	35,311	102,644	14.5	32.0
5 .....	74,722	2,206	32,055	106,777	18.4	32.0

Rep unit 12 represents 36.0 percent of medium-voltage dry-type distribution transformers units shipped, and 92.6 percent of shipments for equipment class 8 (three phase medium-voltage dry-type, 45–95 kV BIL).

TABLE V.31—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 12

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$ *
1 .....	1	4,649
2 .....	9	3,051
3 .....	49	496



TABLE V.31—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 12—Continued

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$*
4 .....	54	– 19
5 .....	80	– 4,152

\* The savings represent the average LCC for affected consumers.

Rep unit 12 represents 36.0 percent of medium-voltage dry-type distribution transformers units shipped, and 92.6 percent of shipments for equipment class 8 (three phase medium-voltage dry-type, 45–95 kV BIL).

TABLE V.32—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 18

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	85,302	9,986	145,749	231,051	.....	32.2
1 .....	103,468	6,764	98,728	202,196	5.6	32.2
2 .....	113,456	6,493	94,798	208,254	8.1	32.2
3 .....	134,347	5,429	79,221	213,567	10.8	32.2
4 .....	137,299	5,289	77,183	214,481	11.1	32.2
5 .....	153,330	4,864	71,007	224,338	13.3	32.2

Rep unit 18 represents 0.3 percent of medium-voltage dry-type distribution transformers units shipped, and 0.8 percent of shipments for equipment class 8 (three phase medium-voltage dry-type, 45–95 kV BIL).

TABLE V.33—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 18

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$*
1 .....	5	28,855
2 .....	12	22,797
3 .....	24	17,483
4 .....	26	16,570
5 .....	44	6,713

\* The savings represent the average LCC for affected consumers.

Rep unit 18 represents 0.3 percent of medium-voltage dry-type distribution transformers units shipped, and 0.8 percent of shipments for equipment class 8 (three phase medium-voltage dry-type, 45–95 kV BIL).

TABLE V.34—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 13

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	24,894	1,316	19,168	44,062	.....	31.9
1 .....	25,304	1,256	18,292	43,597	6.8	31.9
2 .....	26,181	1,212	17,653	43,835	12.4	31.9
3 .....	28,454	1,111	16,176	44,630	17.3	31.9
4 .....	31,436	986	14,364	45,801	19.8	31.9
5 .....	31,983	936	13,636	45,619	18.7	31.9

Rep unit 13 represents 1.8 percent of medium-voltage dry-type distribution transformers units shipped, and 7.6 percent of shipments for equipment class 10 (three phase medium-voltage dry-type, ≥96 kV BIL).

TABLE V.35—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 13

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$*
1 .....	24	515
2 .....	44	228
3 .....	72	– 568
4 .....	81	– 1,739

TABLE V.35—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 13—Continued

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021\$) *
5 .....	80	- 1,557

\* The savings represent the average LCC for affected consumers.  
Rep unit 13 represents 1.8 percent of medium-voltage dry-type distribution transformers units shipped, and 7.6 percent of shipments for equipment class 10 (three phase medium-voltage dry-type, ≥96 kV BIL).

TABLE V.36—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 14

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	63,684	4,386	63,615	127,299	.....	32.0
1 .....	66,945	4,263	61,834	128,779	26.6	32.0
2 .....	70,089	4,140	60,066	130,155	26.1	32.0
3 .....	80,939	3,629	52,588	133,527	22.8	32.0
4 .....	85,714	3,281	47,555	133,268	19.9	32.0
5 .....	93,684	3,027	43,893	137,577	22.1	32.0

Rep unit 14 represents 22.1 percent of medium-voltage dry-type distribution transformers units shipped, and 91.5 percent of shipments for equipment class 10 (three phase medium-voltage dry-type, ≥96 kV BIL).

TABLE V.37—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 14

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021\$) *
1 .....	88	- 1,480
2 .....	87	- 2,856
3 .....	78	- 6,228
4 .....	82	- 5,969
5 .....	93	- 10,278

\* The savings represent the average LCC for affected consumers.  
Rep unit 14 represents 22.1 percent of medium-voltage dry-type distribution transformers units shipped, and 91.5 percent of shipments for equipment class 10 (three phase medium-voltage dry-type, ≥96 kV BIL).

TABLE V.38—AVERAGE LCC AND PBP RESULTS FOR REPRESENTATIVE UNIT 19

Standard level	Average costs (2021\$)				Simple payback period (years)	Average lifetime (years)
	Installed cost	First year's operating cost	Lifetime operating cost	LCC		
0 .....	88,951	9,349	136,177	225,128	.....	31.9
1 .....	107,573	7,209	105,019	212,591	8.7	31.9
2 .....	117,299	6,845	99,747	217,046	11.3	31.9
3 .....	137,304	5,717	83,212	220,516	13.3	31.9
4 .....	142,539	5,455	79,409	221,948	13.8	31.9
5 .....	154,646	5,105	74,341	228,988	15.5	31.9

Rep unit 19 represents 0.2 percent of medium-voltage dry-type distribution transformers units shipped, and 0.8 percent of shipments for equipment class 10 (three phase medium-voltage dry-type, ≥96 kV BIL).

TABLE V.39—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 19

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021\$) *
1 .....	16	12,536
2 .....	38	8,082
3 .....	43	4,611
4 .....	47	3,180

TABLE V.39—LCC SAVINGS RELATIVE TO THE BASE CASE EFFICIENCY DISTRIBUTION FOR REPRESENTATIVE UNIT 19—Continued

Standard level	% Consumers with net cost	Average savings—impacted consumers (2021)\$*
5 .....	63	−3,860

\* The savings represent the average LCC for affected consumers.

Rep unit 19 represents 0.2 percent of medium-voltage dry-type distribution transformers units shipped, and 0.8 percent of shipments for equipment class 10 (three phase medium-voltage dry-type, ≥96 kV BIL).

b. Consumer Subgroup Analysis

In the consumer subgroup analysis, DOE estimated the impact of the considered TSLs on utilities who deploy distribution transformers in vaults or other space constrained areas, and

utilities who serve low population densities. Table V.40 compares the average LCC savings and PBP at each efficiency level for the consumer subgroups with similar metrics for the entire consumer sample for equipment

classes 1 and 2. Chapter 11 of the NOPR TSD presents the complete LCC and PBP results for the subgroups.

Utilities Serving Low Population Densities

TABLE V.40—COMPARISON OF LCC SAVINGS AND PBP FOR UTILITIES SERVING LOW POPULATION DENSITIES SUBGROUP AND ALL UTILITIES; REPRESENTATIVE UNIT 1

TSL	All utilities	Serving low population densities
<b>Average LCC Savings (2021\$)</b>		
1 .....	−53	−55
2 .....	−114	−112
3 .....	0	90
4 .....	72	178
5 .....	−599	−497
<b>Payback Period (years)</b>		
1 .....	78.6	120.6
2 .....	69.2	86.0
3 .....	19.3	19.0
4 .....	16.2	15.8
5 .....	40.5	42.2
<b>Consumers with Net Cost (%)</b>		
1 .....	69	66
2 .....	86	82
3 .....	47	33
4 .....	34	20
5 .....	96	92

Rep unit 1 represents 20.3 percent of liquid-immersed distribution transformers units shipped, and 21.8 percent of shipments for equipment class 1 (single phase liquid-immersed).

TABLE V.41—COMPARISON OF LCC SAVINGS AND PBP FOR UTILITIES SERVING LOW POPULATION DENSITIES SUBGROUP AND ALL UTILITIES; REPRESENTATIVE UNIT 2

TSL	All utilities	Serving low population densities
<b>Average LCC Savings (2021\$)</b>		
1 .....	146	189
2 .....	201	267
3 .....	186	253
4 .....	131	199
5 .....	−176	−107
<b>Payback Period (years)</b>		
1 .....	0.0	0.0
2 .....	0.4	0.3
3 .....	4.1	3.9
4 .....	10.1	9.9
5 .....	29.3	30.2

TABLE V.41—COMPARISON OF LCC SAVINGS AND PBP FOR UTILITIES SERVING LOW POPULATION DENSITIES SUBGROUP AND ALL UTILITIES; REPRESENTATIVE UNIT 2—Continued

TSL	All utilities	Serving low population densities
<b>Consumers with Net Cost (%)</b>		
1 .....	22	21
2 .....	10	7
3 .....	9	7
4 .....	13	10
5 .....	84	72

Rep unit 2 represents 72.7 percent of liquid-immersed distribution transformers units shipped, and 78.0 percent of shipments for equipment class 1 (single phase liquid-immersed).

TABLE V.42—COMPARISON OF LCC SAVINGS AND PBP FOR UTILITIES SERVING LOW POPULATION DENSITIES SUBGROUP AND ALL UTILITIES; REPRESENTATIVE UNIT 3

TSL	All utilities	Serving low population densities
<b>Average LCC Savings (2021\$)</b>		
1 .....	1,121	1,798
2 .....	1,312	2,044
3 .....	1,216	1,962
4 .....	1,029	1,772
5 .....	-414	308
<b>Payback Period (years)</b>		
1 .....	5.9	5.3
2 .....	5.6	5.1
3 .....	8.4	7.8
4 .....	12.3	11.9
5 .....	21.8	22.3
<b>Consumers with Net Cost (%)</b>		
1 .....	28	22
2 .....	22	16
3 .....	23	16
4 .....	23	15
5 .....	65	44

Rep unit 3 represents 0.2 percent of liquid-immersed distribution transformers units shipped, and 0.2 percent of shipments for equipment class 1 (single phase liquid-immersed).

TABLE V.43—COMPARISON OF LCC SAVINGS AND PBP UTILITIES SERVING LOW POPULATION DENSITIES SUBGROUP AND ALL UTILITIES; REPRESENTATIVE UNIT 4

TSL	All utilities	Serving low population densities
<b>Average LCC Savings (2021\$)</b>		
1 .....	-26	-12
2 .....	-55	-9
3 .....	381	629
4 .....	511	802
5 .....	77	372
<b>Payback Period (years)</b>		
1 .....	26.9	28.0
2 .....	24.4	24.4
3 .....	13.2	13.1
4 .....	12.0	11.9
5 .....	18.7	19.1
<b>Consumers with Net Cost (%)</b>		
1 .....	38	37
2 .....	67	58
3 .....	25	21

TABLE V.43—COMPARISON OF LCC SAVINGS AND PBP UTILITIES SERVING LOW POPULATION DENSITIES SUBGROUP AND ALL UTILITIES; REPRESENTATIVE UNIT 4—Continued

TSL	All utilities	Serving low population densities
4 .....	13	9
5 .....	49	32

Rep unit 4 represents 4.6 percent of liquid-immersed distribution transformers units shipped, and 68.0 percent of shipments for equipment class 2 (three phase liquid-immersed).

TABLE V.44—COMPARISON OF LCC SAVINGS AND PBP FOR UTILITIES SERVING LOW POPULATION DENSITIES SUBGROUP AND ALL UTILITIES; REPRESENTATIVE UNIT 5

TSL	All utilities	Serving low population densities
<b>Average LCC Savings (2021\$)</b>		
1 .....	986	1,498
2 .....	2,095	2,876
3 .....	1,888	2,839
4 .....	1,543	2,830
5 .....	-7,913	-5,881
<b>Payback Period (years)</b>		
1 .....	11.0	10.1
2 .....	8.0	7.1
3 .....	11.0	9.9
4 .....	14.2	13.8
5 .....	35.8	37.3
<b>Consumers with Net Cost (%)</b>		
1 .....	41	38
2 .....	27	23
3 .....	29	24
4 .....	29	19
5 .....	96	89

Rep unit 5 represents 2.1 percent of liquid-immersed distribution transformers units shipped, and 31.5 percent of shipments for equipment class 2 (three phase liquid-immersed).

Utilities That Deploy Distribution Transformers in Vaults or Other Space Constrained Areas

As noted in section IV.C.1, for this NOPR DOE considered submersible distribution transformers and their associated vault, or space constrained installation costs with individual representative units, 15 and 16. The consumer results for these equipment are presented in Table V.12 through Table V.15.

c. Rebuttable Presumption Payback

As discussed in section IV.F.11, EPCA establishes a rebuttable presumption that an energy conservation standard is economically justified if the increased

purchase cost for a product that meets the standard is less than three times the value of the first-year energy savings resulting from the standard. In calculating a rebuttable presumption payback period for each of the considered standard level, DOE used discrete values, and as required by EPCA, based the energy use calculation on the DOE test procedure for distribution transformers. In contrast, the PBPs presented in section V.B.1.a were calculated using distributions that reflect the range of energy use in the field.

Table V.45 presents the rebuttable-presumption payback periods for the considered standard level for

distribution transformers. While DOE examined the rebuttable-presumption criterion, it considered whether the standard levels considered for the NOPR are economically justified through a more detailed analysis of the economic impacts of those levels, pursuant to 42 U.S.C. 6295(o)(2)(B)(i), that considers the full range of impacts to the consumer, manufacturer, Nation, and environment. The results of that analysis serve as the basis for DOE to definitively evaluate the economic justification for a potential standard level, thereby supporting or rebutting the results of any preliminary determination of economic justification.

TABLE V.45—REBUTTABLE-PRESUMPTION PAYBACK PERIODS

EC	RU	Trial standard level				
		1	2	3	4	5
1 .....	1	15.9	19.9	25.3	22.1	25.7
1 .....	2	0.1	6.4	9.3	12.1	19.7
1 .....	3	0	0	74.6	19.1	17.9

TABLE V.45—REBUTTABLE-PRESUMPTION PAYBACK PERIODS—Continued

EC	RU	Trial standard level				
		1	2	3	4	5
2	4	11.2	22.9	14.2	13.2	14.1
2	5	0	0	0	21.1	26.1
2	17	8.4	9.7	10.3	10.0	14.6
3	6	0	2.3	4.3	8.7	8.7
4	7	0	0	3.8	8.1	6.9
6	8	5.6	8.1	9.7	10.6	10.6
6	9	1.3	1.4	4.6	7.9	9.7
8	10	1.4	6.6	18.4	15.4	16.0
8	11	1.4	4.9	8.9	8.7	8.7
8	18	4.6	5.8	9.7	9.6	10.2
10	12	0	0.6	63.2	18.2	15.4
10	13	5.5	10.2	12.5	43.4	25.3
10	14	21.4	11.4	-67.7	39.4	24.4
10	19	5.6	6.5	12.7	12.0	12.0
12	15	n.a.	n.a.	n.a.	n.a.	14.1
12	16	n.a.	n.a.	n.a.	n.a.	26.2

2. Economic Impacts on Manufacturers

DOE performed an MIA to estimate the impact of amended energy conservation standards on manufacturers of distribution transformers. The following section describes the expected impacts on manufacturers at each considered TSL. Chapter 12 of the NOPR TSD explains the analysis in further detail.

a. Industry Cash Flow Analysis Results

In this section, DOE provides GRIM results from the analysis, which examines changes in the industry that would result from a standard. The following tables summarize the estimated financial impacts (represented by changes in INPV) of potential amended energy conservation standards on manufacturers of distribution transformers, as well as the conversion costs that DOE estimates manufacturers of distribution transformers would incur at each TSL. DOE analyzes the potential impacts on INPV separately for each type of distribution transformer manufacturers: liquid-immersed; LVDT; and MVDT.

As discussed in section IV.J.2.d of this document, DOE modeled two scenarios to evaluate a range of cash flow impacts on the distribution transformer industry: (1) the preservation of gross margin percentage scenario and (2) the preservation of operating profit scenario. In the preservation of gross margin percentage scenario, distribution transformer manufacturers are able to maintain the same gross margin percentage, even as the MPCs of distribution transformers increase due to energy conservation standards. In this scenario, the same gross margin percentage of 20 percent<sup>102</sup> is applied across all efficiency levels. In the preservation of operating profit scenario, manufacturers do not earn additional operating profit when compared to the no-standards case scenario. While manufacturers make the necessary upfront investments required to produce compliant equipment, per-unit operating profit does not change in absolute dollars. The preservation of operating profit scenario results in the lower (or more severe) bound to impacts of potential amended standards on industry.

Each of the modeled scenarios results in a unique set of cash-flows and corresponding industry values at each TSL for each type of distribution transformer manufacturers. In the following discussion, the INPV results refer to the difference in industry value between the no-new-standards case and each standards case resulting from the sum of discounted cash-flows from 2022 through 2056. To provide perspective on the short-run cash-flow impact, DOE includes in the discussion of results a comparison of free cash flow between the no-new-standards case and the standards case at each TSL in the year before amended standards are required.

DOE presents the range in INPV for liquid-immersed distribution transformer manufacturers in Table V.46 and Table V.47; the range in INPV for LVDT distribution transformer manufacturers in Table V.48 and Table V.49; and the range in INPV for MVDT distribution transformer manufacturers in Table V.50 and Table V.51.

Liquid-Immersed Distribution Transformers

TABLE V.46—MANUFACTURER IMPACT ANALYSIS FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS—PRESERVATION OF GROSS MARGIN PERCENTAGE SCENARIO

	Units	No-new-standards case	Trial standard level				
			1	2	3	4	5
INPV	2021\$ millions	1,384	1,297	1,268	1,232	1,233	1,347
Change in INPV	2021\$ millions		(87.1)	(116.5)	(152.1)	(151.0)	(37.2)
	%		(6.3)	(8.4)	(11.0)	(10.9)	(2.7)
Product Conversion Costs	2021\$ millions		72.0	82.5	99.1	102.0	102.9
Capital Conversion Costs	2021\$ millions		56.6	92.6	150.3	168.5	186.6

<sup>102</sup> The gross margin percentage of 20 percent is based on a manufacturer markup of 1.25.

TABLE V.46—MANUFACTURER IMPACT ANALYSIS FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS—PRESERVATION OF GROSS MARGIN PERCENTAGE SCENARIO—Continued

	Units	No-new-standards case	Trial standard level				
			1	2	3	4	5
Total Conversion Costs .....	2021\$ millions .....	.....	128.6	175.2	249.4	270.6	289.4

\* Numbers in parentheses “( )” are negative. Some numbers might not round due to rounding.

TABLE V.47—MANUFACTURER IMPACT ANALYSIS FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS—PRESERVATION OF OPERATING PROFIT SCENARIO

	Units	No-new-standards case	Trial standard level				
			1	2	3	4	5
INPV .....	2021\$ millions .....	1,384	1,283	1,242	1,166	1,133	1,004
Change in INPV .....	2021\$ millions .....	.....	(101.1)	(142.1)	(218.3)	(251.3)	(380.7)
	% .....	.....	(7.3)	(10.3)	(15.8)	(18.1)	(27.5)
Product Conversion Costs .....	2021\$ millions .....	.....	72.0	82.5	99.1	102.0	102.9
Capital Conversion Costs .....	2021\$ millions .....	.....	56.6	92.6	150.3	168.5	186.6
Total Conversion Costs .....	2021\$ millions .....	.....	128.6	175.2	249.4	270.6	289.4

\* Numbers in parentheses “( )” are negative. Some numbers might not round due to rounding.

At TSL 1, DOE estimates the impacts on INPV for liquid-immersed distribution transformer manufacturers to range from –\$101.1 million to –\$87.1 million, corresponding to a change in INPV of –7.3 percent to –6.3 percent. At TSL 1, industry free cash flow is estimated to decrease by approximately 56.0 percent to \$40.2 million, compared to the no-new-standard case value of \$91.2 million in 2026, the year before the estimated compliance date.

TSL 1 would set the energy conservation standard at EL 1 for all liquid-immersed distribution transformers except for submersible liquid-immersed transformers (Equipment Class 12, Rep. Unit 15 and 16), which would remain at baseline. DOE estimates that approximately 4.3 percent of shipments would meet or exceed these energy conservation standards in the no-new-standards case in 2027. DOE estimates liquid-immersed distribution transformer manufacturers would spend approximately \$72.0 million in product conversion costs to redesign transformers and approximately \$56.6 million in capital conversion costs as some liquid-immersed distribution transformer cores manufactured are expected to use amorphous steel.

At TSL 1, the shipment-weighted average MPC for liquid-immersed distribution transformers increases by 0.6 percent relative to the no-new-standards case shipment-weighted average MPC in 2027. In the gross margin percentage scenario, manufacturers can fully pass on this

slight cost increase to customers. The slight increase in shipment-weighted average MPC is outweighed by the \$128.6 million in conversion costs, causing a negative change in INPV at TSL 1 under the preservation of gross margin percentage scenario.

Under the preservation of operating profit scenario, manufacturers earn the same per-unit operating profit as would be earned in the no-new-standards case, but manufacturers do not earn additional profit from their investments or higher MPCs. In this scenario, the 0.6 percent shipment-weighted average MPC increase results in a reduction in the margin after the analyzed compliance year. This reduction in the margin and the \$128.6 million in conversion costs incurred by manufacturers cause a negative change in INPV at TSL 1 under the preservation of operating profit scenario.

At TSL 2, DOE estimates the impacts on INPV for liquid-immersed distribution transformer manufacturers to range from –\$142.1 million to –\$116.5 million, corresponding to a change in INPV of –10.3 percent to –8.4 percent. At TSL 2, industry free cash flow is estimated to decrease by approximately 77.8 percent to \$20.2 million, compared to the no-new-standard case value of \$91.2 million in 2026, the year before the estimated compliance date.

TSL 2 would set the energy conservation standard at EL 2 for all liquid-immersed distribution transformers except for submersible liquid-immersed transformers (Equipment Class 12, Rep. Unit 15 and 16), which would remain at baseline.

DOE estimates that approximately 1.4 percent of shipments would meet or exceed these energy conservation standards in the no-new-standards case in 2027. DOE estimates liquid-immersed distribution transformer manufacturers would spend approximately \$82.5 million in product conversion costs to redesign transformers and approximately \$92.6 million in capital conversion costs as many liquid-immersed distribution transformer cores manufactured are expected to use amorphous steel.

At TSL 2, the shipment-weighted average MPC for liquid-immersed distribution transformers increases by 1.7 percent relative to the no-new-standards case shipment-weighted average MPC in 2027. The increase in shipment-weighted average MPC is outweighed by the \$175.2 million in conversion costs, causing a negative change in INPV at TSL 2 under the preservation of gross margin percentage scenario.

Under the preservation of operating profit scenario, the 1.7 percent shipment-weighted average MPC increase results in a reduction in the margin after the analyzed compliance year. This reduction in the margin and the \$175.2 million in conversion costs incurred by manufacturers cause a negative change in INPV at TSL 2 under the preservation of operating profit scenario.

At TSL 3, DOE estimates the impacts on INPV for liquid-immersed distribution transformer manufacturers to range from –\$218.3 million to –\$152.1 million, corresponding to a change in INPV of –15.8 percent to

– 11.0 percent. At TSL 3, industry free cash flow is estimated to decrease by approximately 112.8 percent to –\$11.6 million, compared to the no-new-standard case value of \$91.2 million in 2026, the year before the estimated compliance date.

TSL 3 would set the energy conservation standard at EL 3 for all liquid-immersed distribution transformers except for submersible liquid-immersed transformers (Equipment Class 12, Rep. Unit 15 and 16), which would remain at baseline. DOE estimates that approximately 0.9 percent of shipments would meet or exceed these energy conservation standards in the no-new-standards case in 2027. DOE estimates liquid-immersed distribution transformer manufacturers would spend approximately \$99.1 million in product conversion costs to redesign transformers and approximately \$150.3 million in capital conversion costs as most liquid-immersed distribution transformer cores manufactured are expected to use amorphous steel.

At TSL 3, the shipment-weighted average MPC for liquid-immersed distribution transformers increases by 5.6 percent relative to the no-new-standards case shipment-weighted average MPC in 2027. The moderate increase in shipment-weighted average MPC is outweighed by the \$249.4 million in conversion costs, causing a negative change in INPV at TSL 3 under the preservation of gross margin percentage scenario.

Under the preservation of operating profit scenario, the 5.6 percent shipment-weighted average MPC increase results in a reduction in the margin after the analyzed compliance year. This reduction in the margin and the \$249.4 million in conversion costs incurred by manufacturers cause a negative change in INPV at TSL 3 under the preservation of operating profit scenario.

At TSL 4, DOE estimates the impacts on INPV for liquid-immersed distribution transformer manufacturers to range from –\$251.3 million to

–\$151.0 million, corresponding to a change in INPV of –18.1 percent to –10.9 percent. At TSL 4, industry free cash flow is estimated to decrease by approximately 122.9 percent to –\$20.9 million, compared to the no-new-standard case value of \$91.2 million in 2026, the year before the estimated compliance date.

TSL 4 would set the energy conservation standard at EL 4 for all liquid-immersed distribution transformers except for submersible liquid-immersed transformers (Equipment Class 12, Rep. Unit 15 and 16), which would remain at baseline. DOE estimates that approximately 0.7 percent of shipments would meet or exceed these energy conservation standards in the no-new-standards case in 2027. DOE estimates liquid-immersed distribution transformer manufacturers would spend approximately \$102.0 million in product conversion costs to redesign transformers and approximately \$168.5 million in capital conversion costs as almost all liquid-immersed distribution transformer cores manufactured are expected to use amorphous steel.

At TSL 4, the shipment-weighted average MPC for liquid-immersed distribution transformers increases by 8.9 percent relative to the no-new-standards case shipment-weighted average MPC in 2027. The moderate increase in shipment-weighted average MPC is outweighed by the \$270.6 million in conversion costs, causing a negative change in INPV at TSL 4 under the preservation of gross margin percentage scenario.

Under the preservation of operating profit scenario, the 8.9 percent shipment-weighted average MPC increase results in a reduction in the margin after the analyzed compliance year. This reduction in the margin and the \$270.6 million in conversion costs incurred by manufacturers cause a negative change in INPV at TSL 4 under the preservation of operating profit scenario.

At TSL 5, DOE estimates the impacts on INPV for liquid-immersed

distribution transformer manufacturers to range from –\$380.7 million to –\$37.2 million, corresponding to a change in INPV of –27.5 percent to –2.7 percent. At TSL 5, industry free cash flow is estimated to decrease by approximately 132.1 percent to –\$29.3 million, compared to the no-new-standard case value of \$91.2 million in 2026, the year before the estimated compliance date.

TSL 5 would set the energy conservation standard at EL 5, max-tech, for all liquid-immersed distribution transformers. DOE estimates that approximately 0.2 percent of shipments would meet these energy conservation standards in the no-new-standards case in 2027. DOE estimates liquid-immersed distribution transformer manufacturers would spend approximately \$102.9 million in product conversion costs to redesign transformers and approximately \$186.6 million in capital conversion costs as almost all liquid-immersed distribution transformer cores manufactured are expected to use amorphous steel.

At TSL 5, the shipment-weighted average MPC for liquid-immersed distribution transformers increases by 33.3 percent relative to the no-new-standards case shipment-weighted average MPC in 2027. The significant increase in shipment-weighted average MPC is outweighed by the \$289.4 million in conversion costs, causing a negative change in INPV at TSL 5 under the preservation of gross margin percentage scenario.

Under the preservation of operating profit scenario, the 33.3 percent shipment-weighted average MPC increase results in a reduction in the margin after the analyzed compliance year. This reduction in the margin and the \$289.4 million in conversion costs incurred by manufacturers cause a negative change in INPV at TSL 5 under the preservation of operating profit scenario.

Low-Voltage Dry-Type Distribution Transformers

TABLE V.48—MANUFACTURER IMPACT ANALYSIS FOR LOW-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS—PRESERVATION OF GROSS MARGIN PERCENTAGE SCENARIO

	Units	No-new-standards case	Trial standard level				
			1	2	3	4	5
INPV .....	2021\$ millions .....	194	189	189	177	168	161
Change in INPV .....	2021\$ millions .....	.....	(5.4)	(4.9)	(16.9)	(26.3)	(33.5)
	% .....	.....	(2.8)	(2.5)	(8.7)	(13.6)	(17.2)
Product Conversion Costs .....	2021\$ millions .....	.....	9.6	9.6	14.5	18.9	19.1
Capital Conversion Costs .....	2021\$ millions .....	.....	0.0	0.0	19.1	37.2	50.3



TABLE V.48—MANUFACTURER IMPACT ANALYSIS FOR LOW-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS—PRESERVATION OF GROSS MARGIN PERCENTAGE SCENARIO—Continued

	Units	No-new-standards case	Trial standard level				
			1	2	3	4	5
Total Conversion Costs .....	2021\$ millions .....	.....	9.6	9.6	33.5	56.1	69.4

\* Numbers in parentheses “( )” are negative. Some numbers might not round due to rounding.

TABLE V.49—MANUFACTURER IMPACT ANALYSIS FOR LOW-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS—PRESERVATION OF OPERATING PROFIT SCENARIO

	Units	No-new-standards case	Trial standard level				
			1	2	3	4	5
INPV .....	2021\$ millions .....	194	189	188	167	145	133
Change in INPV .....	2021\$ millions .....	.....	(5.4)	(5.9)	(27.0)	(49.1)	(61.0)
	% .....	.....	(2.8)	(3.0)	(13.9)	(25.3)	(31.4)
Product Conversion Costs .....	2021\$ millions .....	.....	9.6	9.6	14.5	18.9	19.1
Capital Conversion Costs .....	2021\$ millions .....	.....	0.0	0.0	19.1	37.2	50.3
Total Conversion Costs .....	2021\$ millions .....	.....	9.6	9.6	33.5	56.1	69.4

\* Numbers in parentheses “( )” are negative. Some numbers might not round due to rounding.

At TSL 1, DOE estimates the impacts on INPV for LVDT distribution transformer manufacturers to be approximately –\$5.4 million, which corresponds to a change in INPV of –2.8 percent. At TSL 1, industry free cash flow is estimated to decrease by approximately 17.8 percent to \$15.6 million, compared to the no-new-standard case value of \$19.0 million in 2026, the year before the estimated compliance date.

TSL 1 would set the energy conservation standard at EL 1 for all LVDT distribution transformers. DOE estimates that approximately 22.7 percent of shipments would meet or exceed these energy conservation standards in the no-new-standards case in 2027. DOE estimates LVDT distribution transformer manufacturers would spend approximately \$9.6 million in product conversion costs to redesign transformers but would not have to make significant investments in capital conversion costs as no LVDT distribution transformer cores used are expected to use amorphous steel.

At TSL 1, the shipment-weighted average MPC for LVDT distribution transformers does not increase relative to the no-new-standards case shipment-weighted average MPC in 2027. The preservation of gross margin percentage scenario produces similar INPV results as the preservation of operating profit scenario due to the negligible change in MPC at TSL 1. The change in INPV is driven exclusively by the \$9.6 million in conversion costs, causing a negative change in INPV at TSL 1 under both scenarios.

At TSL 2, DOE estimates the impacts on INPV for LVDT distribution transformer manufacturers to range from –\$5.9 million to –\$4.9 million, corresponding to a change in INPV of –2.8 percent to –2.5 percent. At TSL 2, industry free cash flow is estimated to decrease by approximately 17.8 percent to \$15.6 million, compared to the no-new-standard case value of \$19.0 million in 2026, the year before the estimated compliance date.

TSL 2 would set the energy conservation standard at EL 2 for all LVDT distribution transformers. DOE estimates that approximately 3.4 percent of shipments would meet or exceed these energy conservation standards in the no-new-standards case in 2027. DOE estimates LVDT distribution transformer manufacturers would spend approximately \$9.6 million in product conversion costs to redesign transformers but would not have to make significant investments in capital conversion costs as no LVDT distribution transformer cores used are expected to use amorphous steel.

At TSL 2, the shipment-weighted average MPC for LVDT distribution transformers increases by 0.8 percent relative to the no-new-standards case shipment-weighted average MPC in 2027. The increase in shipment-weighted average MPC is outweighed by the \$9.6 million in conversion costs, causing a negative change in INPV at TSL 2 under the preservation of gross margin percentage scenario.

Under the preservation of operating profit scenario, the 0.8 percent shipment-weighted average MPC increase results in a reduction in the

margin after the analyzed compliance year. This reduction in the margin and the \$9.6 million in conversion costs incurred by manufacturers cause a negative change in INPV at TSL 2 under the preservation of operating profit scenario.

At TSL 3, DOE estimates the impacts on INPV for LVDT distribution transformer manufacturers to range from –\$27.0 million to –\$16.9 million, corresponding to a change in INPV of –13.9 percent to –8.7 percent. At TSL 3, industry free cash flow is estimated to decrease by approximately 72.1 percent to \$5.3 million, compared to the no-new-standard case value of \$19.0 million in 2026, the year before the estimated compliance date.

TSL 3 would set the energy conservation standard at EL 3 for all LVDT distribution transformers. DOE estimates that approximately 0.1 percent of shipments would meet or exceed these energy conservation standards in the no-new-standards case in 2027. DOE estimates LVDT distribution transformer manufacturers would spend approximately \$14.5 million in product conversion costs to redesign transformers and approximately \$19.1 million in capital conversion costs as some LVDT distribution transformer cores manufactured are expected to use amorphous steel.

At TSL 3, the shipment-weighted average MPC for LVDT distribution transformers increases by 8.5 percent relative to the no-new-standards case shipment-weighted average MPC in 2027. The moderate increase in shipment-weighted average MPC is outweighed by the \$33.5 million in

conversion costs, causing a negative change in INPV at TSL 3 under the preservation of gross margin percentage scenario.

Under the preservation of operating profit scenario, the 8.5 percent shipment-weighted average MPC increase results in a reduction in the margin after the analyzed compliance year. This reduction in the margin and the \$33.5 million in conversion costs incurred by manufacturers cause a negative change in INPV at TSL 3 under the preservation of operating profit scenario.

At TSL 4, DOE estimates the impacts on INPV for LVDT distribution transformer manufacturers to range from –\$49.1 million to –\$26.3 million, corresponding to a change in INPV of –25.3 percent to –13.6 percent. At TSL 4, industry free cash flow is estimated to decrease by approximately 123.2 percent to –\$4.4 million, compared to the no-new-standard case value of \$19.0 million in 2026, the year before the estimated compliance date.

TSL 4 would set the energy conservation standard at EL 4 for all LVDT distribution transformers. DOE estimates that no shipments would meet these energy conservation standards in the no-new-standards case in 2027. DOE estimates LVDT distribution transformer manufacturers would spend approximately \$18.9 million in product conversion costs to redesign all LVDT transformers and approximately \$37.2 million in capital conversion costs as almost all LVDT distribution

transformer cores manufactured are expected to use amorphous steel.

At TSL 4, the shipment-weighted average MPC for LVDT distribution transformers increases by 19.0 percent relative to the no-new-standards case shipment-weighted average MPC in 2027. The significant increase in shipment-weighted average MPC is outweighed by the \$56.1 million in conversion costs, causing a negative change in INPV at TSL 4 under the preservation of gross margin percentage scenario.

Under the preservation of operating profit scenario, the 19.0 percent shipment-weighted average MPC increase results in a reduction in the margin after the analyzed compliance year. This reduction in the margin and the \$56.1 million in conversion costs incurred by manufacturers cause a negative change in INPV at TSL 4 under the preservation of operating profit scenario.

At TSL 5, DOE estimates the impacts on INPV for LVDT distribution transformer manufacturers to range from –\$61.0 million to –\$33.5 million, corresponding to a change in INPV of –31.4 percent to –17.2 percent. At TSL 5, industry free cash flow is estimated to decrease by approximately 154.4 percent to –\$10.4 million, compared to the no-new-standard case value of \$19.0 million in 2026, the year before the estimated compliance date.

TSL 5 would set the energy conservation standard at EL 5, max-tech, for all LVDT distribution transformers.

DOE estimates that no shipments would meet these energy conservation standards at TSL 5. DOE estimates LVDT distribution transformer manufacturers would spend approximately \$19.1 million in product conversion costs to redesign all LVDT distribution transformers and approximately \$37.2 million in capital conversion costs as all LVDT distribution transformer cores manufactured are expected to use amorphous steel.

At TSL 5, the shipment-weighted average MPC for LVDT distribution transformers increases by 23.0 percent relative to the no-new-standards case shipment-weighted average MPC in 2027. The significant increase in shipment-weighted average MPC is outweighed by the \$69.4 million in conversion costs, causing a negative change in INPV at TSL 5 under the preservation of gross margin percentage scenario.

Under the preservation of operating profit scenario, the 23.0 percent shipment-weighted average MPC increase results in a reduction in the margin after the analyzed compliance year. This reduction in the margin and the \$69.4 million in conversion costs incurred by manufacturers cause a negative change in INPV at TSL 5 under the preservation of operating profit scenario.

Medium-Voltage Dry-Type Distribution Transformers

TABLE V.50—MANUFACTURER IMPACT ANALYSIS FOR MEDIUM-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS—PRESERVATION OF GROSS MARGIN PERCENTAGE MARKUP SCENARIO

	Units	No-new-standards case	Trial standard level				
			1	2	3	4	5
INPV .....	2021\$ millions .....	87	85	86	80	80	82
Change in INPV .....	2021\$ millions .....		(1.8)	(0.8)	(7.7)	(6.8)	(5.2)
	% .....		(2.1)	(0.9)	(8.8)	(7.8)	(5.9)
Product Conversion Costs .....	2021\$ millions .....		3.1	3.1	6.0	6.1	6.2
Capital Conversion Costs .....	2021\$ millions .....		0.0	0.0	11.9	13.1	15.1
Total Conversion Costs .....	2021\$ millions .....		3.1	3.1	17.9	19.2	21.2

\*Numbers in parentheses “( )” are negative. Some numbers might not round due to rounding.

TABLE V.51—MANUFACTURER IMPACT ANALYSIS FOR LOW-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS—PRESERVATION OF OPERATING PROFIT SCENARIO

	Units	No-new-standards case	Trial standard level				
			1	2	3	4	5
INPV .....	2021\$ millions .....	87	85	85	71	69	65
Change in INPV .....	2021\$ millions .....		(1.9)	(2.7)	(16.3)	(18.7)	(22.6)
	% .....		(2.1)	(3.0)	(18.7)	(21.4)	(25.9)
Product Conversion Costs .....	2021\$ millions .....		3.1	3.1	6.0	6.1	6.2

TABLE V.51—MANUFACTURER IMPACT ANALYSIS FOR LOW-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS—PRESERVATION OF OPERATING PROFIT SCENARIO—Continued

	Units	No-new-standards case	Trial standard level				
			1	2	3	4	5
Capital Conversion Costs .....	2021\$ millions .....	.....	0.0	0.0	11.9	13.1	15.1
Total Conversion Costs .....	2021\$ millions .....	.....	3.1	3.1	17.9	19.2	21.2

\*Numbers in parentheses “( )” are negative. Some numbers might not round due to rounding.

At TSL 1, DOE estimates the impacts on INPV for MVDT distribution transformer manufacturers to range from –\$1.9 million to –\$1.8 million, which corresponds to a change in INPV of approximately –2.1 percent in both cases. At TSL 1, industry free cash flow is estimated to decrease by approximately 15.7 percent to \$5.9 million, compared to the no-new-standard case value of \$7.0 million in 2026, the year before the estimated compliance date.

TSL 1 would set the energy conservation standard at EL 1 for all MVDT distribution transformers. DOE estimates that approximately 21.2 percent of shipments would meet or exceed these energy conservation standards in the no-new-standards case in 2027. DOE estimates MVDT distribution transformer manufacturers would spend approximately \$3.1 million in product conversion costs to redesign transformers but would not have to make significant investments in capital conversion costs as no MVDT distribution transformer cores are expected to use amorphous steel.

At TSL 1, the shipment-weighted average MPC for MVDT distribution transformers does not increase relative to the no-new-standards case shipment-weighted average MPC in 2027. The preservation of gross margin percentage scenario produces similar INPV results as the preservation of operating profit scenario due to the negligible change in MPC at TSL 1. The change in INPV is almost exclusively driven by the \$3.1 million in conversion costs, causing a negative change in INPV at TSL 1 under both scenarios.

At TSL 2, DOE estimates the impacts on INPV for MVDT distribution transformer manufacturers to range from –\$2.7 million to –\$0.8 million, corresponding to a change in INPV of –3.0 percent to –0.9 percent. At TSL 2, industry free cash flow is estimated to decrease by approximately 15.7 percent to \$5.9 million, compared to the no-new-standard case value of \$7.0 million in 2026, the year before the estimated compliance date.

TSL 2 would set the energy conservation standard at EL 2 for all MVDT distribution transformers. DOE estimates that approximately 4.2 percent of shipments would meet or exceed these energy conservation standards in the no-new-standards case in 2027. DOE estimates MVDT distribution transformer manufacturers would spend approximately \$3.1 million in product conversion costs to redesign transformers but would not have to make significant investments in capital conversion costs as no MVDT distribution transformer cores are expected to use amorphous steel.

At TSL 2, the shipment-weighted average MPC for MVDT distribution transformers increases by 3.2 percent relative to the no-new-standards case shipment-weighted average MPC in 2027. The increase in shipment-weighted average MPC is outweighed by the \$3.1 million in conversion costs, causing a negative change in INPV at TSL 2 under the preservation of gross margin percentage scenario.

Under the preservation of operating profit scenario, the 3.2 percent shipment-weighted average MPC increase results in a reduction in the margin after the analyzed compliance year. This reduction in the margin and the \$3.1 million in conversion costs incurred by manufacturers cause a negative change in INPV at TSL 2 under the preservation of operating profit scenario.

At TSL 3, DOE estimates the impacts on INPV for MVDT distribution transformer manufacturers to range from –\$16.3 million to –\$7.7 million, corresponding to a change in INPV of –18.7 percent to –8.8 percent. At TSL 3, industry free cash flow is estimated to decrease by approximately 107.1 percent to –\$0.5 million, compared to the no-new-standard case value of \$7.0 million in 2026, the year before the estimated compliance date.

TSL 3 would set the energy conservation standard at EL 3 for all MVDT distribution transformers. DOE estimates that no shipments would meet or exceed these energy conservation

standards in the no-new-standards case in 2027. DOE estimates MVDT distribution transformer manufacturers would spend approximately \$6.0 million in product conversion costs to redesign all MVDT distribution transformers and approximately \$11.9 million in capital conversion costs as many MVDT distribution transformer cores manufactured are expected to use amorphous steel.

At TSL 3, the shipment-weighted average MPC for MVDT distribution transformers increases by 14.5 percent relative to the no-new-standards case shipment-weighted average MPC in 2027. The moderate increase in shipment-weighted average MPC is outweighed by the \$17.9 million in conversion costs, causing a negative change in INPV at TSL 3 under the preservation of gross margin percentage scenario.

Under the preservation of operating profit scenario, the 14.5 percent shipment-weighted average MPC increase results in a reduction in the margin after the analyzed compliance year. This reduction in the margin and the \$17.9 million in conversion costs incurred by manufacturers cause a negative change in INPV at TSL 3 under the preservation of operating profit scenario.

At TSL 4, DOE estimates the impacts on INPV for MVDT distribution transformer manufacturers to range from –\$18.7 million to –\$6.8 million, corresponding to a change in INPV of –21.4 percent to –7.8 percent. At TSL 4, industry free cash flow is estimated to decrease by approximately 115.3 percent to –\$1.1 million, compared to the no-new-standard case value of \$7.0 million in 2026, the year before the estimated compliance date.

TSL 4 would set the energy conservation standard at EL 4 for all MVDT distribution transformers. DOE estimates that no shipments would meet these energy conservation standards in

the no-new-standards case in 2027. DOE estimates MVDT distribution transformer manufacturers would spend approximately \$6.1 million in product conversion costs to redesign all MVDT distribution transformers and approximately \$13.1 million in capital conversion costs as most MVDT distribution transformer cores manufactured are expected to use amorphous steel.

At TSL 4, the shipment-weighted average MPC for MVDT distribution transformers increases by 20.0 percent relative to the no-new-standards case shipment-weighted average MPC in 2027. The significant increase in shipment-weighted average MPC is outweighed by the \$19.2 million in conversion costs, causing a negative change in INPV at TSL 4 under the preservation of gross margin percentage scenario.

Under the preservation of operating profit scenario, the 20.0 percent shipment-weighted average MPC increase results in a reduction in the margin after the analyzed compliance year. This reduction in the margin and the \$19.2 million in conversion costs incurred by manufacturers cause a negative change in INPV at TSL 4 under the preservation of operating profit scenario.

At TSL 5, DOE estimates the impacts on INPV for MVDT distribution transformer manufacturers to range from -\$22.6 million to -\$5.2 million, corresponding to a change in INPV of -25.9 percent to -5.9 percent. At TSL 5, industry free cash flow is estimated to decrease by approximately 128.4 percent to -\$2.0 million, compared to the no-new-standard case value of \$7.0 million in 2026, the year before the estimated compliance date.

TSL 5 would set the energy conservation standard at EL 5, max-tech, for all MVDT distribution transformers. DOE estimates that no shipments would meet these energy conservation

standards at TSL 5. DOE estimates MVDT distribution transformer manufacturers would spend approximately \$6.2 million in product conversion costs to redesign all MVDT distribution transformers and approximately \$15.1 million in capital conversion costs as all MVDT distribution transformer cores manufactured are expected to use amorphous steel.

At TSL 5, the shipment-weighted average MPC for MVDT distribution transformers increases by 29.4 percent relative to the no-new-standards case shipment-weighted average MPC in 2027. The significant increase in shipment-weighted average MPC is outweighed by the \$21.2 million in conversion costs, causing a negative change in INPV at TSL 5 under the preservation of gross margin percentage scenario.

Under the preservation of operating profit scenario, the 29.4 percent shipment-weighted average MPC increase results in a reduction in the margin after the analyzed compliance year. This reduction in the margin and the \$21.2 million in conversion costs incurred by manufacturers cause a negative change in INPV at TSL 5 under the preservation of operating profit scenario.

**b. Direct Impacts on Employment**

To quantitatively assess the potential impacts of amended energy conservation standards on direct employment in the distribution transformers industry, DOE used the GRIM to estimate the domestic labor expenditures and number of direct employees in the no-new-standards case and in each of the standards cases (TSLs) during the analysis period.

Production employees are those who are directly involved in fabricating and assembling equipment within a manufacturer facility. Workers performing services that are closely associated with production operations,

such as materials handling tasks using forklifts, are included as production labor, as well as line supervisors.

DOE used the GRIM to calculate the number of production employees from labor expenditures. DOE used statistical data from the U.S. Census Bureau's 2019 Annual Survey of Manufacturers ("ASM") and the results of the engineering analysis to calculate industry-wide labor expenditures. Labor expenditures related to equipment manufacturing depend on the labor intensity of the product, the sales volume, and an assumption that wages remain fixed in real terms over time. The total labor expenditures in the GRIM were then converted to domestic production employment levels by dividing production labor expenditures by the annual payment per production worker.

Non-production employees account for those workers that are not directly engaged in the manufacturing of the covered equipment. This could include sales, human resources, engineering, and management. DOE estimated non-production employment levels by multiplying the number of distribution transformer workers by a scaling factor. The scaling factor is calculated by taking the ratio of the total number of employees, and the total production workers associated with the industry NAICS code 335311, which covers power, distribution, and specialty transformer manufacturing.

Using data from manufacturer interviews and estimated market share data, DOE estimates that approximately 85 percent of all liquid-immersed distribution transformer manufacturing; 15 percent of all LVDT distribution transformer manufacturing; and 75 percent of all MVDT distribution transformer manufacturing takes place domestically.

**Liquid-Immersed Distribution Transformers**

**TABLE V.52—DOMESTIC EMPLOYMENT FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS IN 2027**

	No-new-standards case	Trial standard level				
		1	2	3	4	5
Domestic Production Workers in 2027 ....	5,164	5,193	5,251	5,453	5,624	6,885
Domestic Non-Production Workers in 2027 .....	1,830	1,840	1,861	1,932	1,993	2,440
Total Direct Employment in 2027 .....	6,994	7,033	7,112	7,385	7,617	9,325
Potential Changes in Total Direct Employment in 2027 .....		(874)–39	(1,180)–118	(1,506)–391	(1,549)–623	(1,549)–2,331

Using the estimated labor content from the GRIM combined with data

from the 2019 ASM, DOE estimates that there would be approximately 5,164

domestic production workers, and 1,830 domestic non-production workers

involved in liquid-immersed distribution transformer manufacturing in 2027 in the absence of amended energy conservation standards. Table V.52 shows the range of the impacts of energy conservation standards on U.S. production on liquid-immersed distribution transformers.

Amorphous core production is more labor intensive and would require additional labor expenditures. The upper range of the “Potential Change in Total Direct Employment in 2027” displayed in Table V.52, assumes that all domestic liquid-immersed distribution transformer manufacturing remains in the U.S. For this scenario, the additional labor expenditures associated with amorphous core production result in the number of total direct employees to increase due to energy conservation standards. At higher TSLs, the estimated number of amorphous cores used in liquid-immersed distribution transformers

increases, which causes the number of direct employees to also increase. The lower range of the “Potential Change in Total Direct Employment in 2027” displayed in Table V.52, assumes that as more amorphous cores are used to meet higher energy conservation standards, either the amorphous core production is out-sourced to core only manufacturers (manufacturers that specialize in manufacturing cores used in distribution transformers, but do not actually manufacture entire distribution transformers) which may be located in foreign countries, or distribution transformer manufacturing is re-located to foreign countries. This lower range assumes that 30 percent of distribution transformers using amorphous cores are re-located to foreign countries due to the energy conservation standard. DOE acknowledges that each distribution transformer manufacturer would individually make a business decision

to either make the substantial investments to add or increase their own amorphous core production capabilities and continue to manufacture their own cores in-house; outsource their amorphous core production to another distribution core manufacturer, which may or may not be located in the U.S.; or re-locate some or all of their distribution transformer manufacturing to a foreign country. DOE acknowledges there is a wide range of potential domestic employment impacts due to energy conservation standards, especially at the higher TSLs. The ranges in potential employment impacts displayed in Table V.52 at each TSL attempt to provide a reasonable upper and lower bound to how liquid-immersed distribution transformer manufacturers may respond to potential energy conservation standards.

Low-Voltage Dry-Type Distribution Transformers

TABLE V.53—DOMESTIC EMPLOYMENT FOR LOW-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS IN 2027

	No-new-standards case	Trial standard level				
		1	2	3	4	5
Domestic Production Workers in 2027 ....	169	169	170	183	201	208
Domestic Non-Production Workers in 2027 .....	60	60	60	65	71	74
Total Direct Employment in 2027 .....	229	229	230	248	272	282
Potential Changes in Total Direct Employment in 2027 .....		0	0–1	(28)–19	(49)–43	(51)–53

Using the estimated labor content from the GRIM combined with data from the 2019 ASM, DOE estimates that there would be approximately 169 domestic production workers, and 60 domestic non-production workers involved in LVDT distribution transformer manufacturing in 2027 in the absence of amended energy conservation standards. Table V.53 shows the range of the impacts of energy conservation standards on U.S.

production on LVDT distribution transformers. DOE used the same methodology to estimate the potential impacts to domestic employment for LVDT distribution transformer manufacturing that was used for liquid-immersed distribution transformer manufacturing. The upper range of the “Potential Change in Total Direct Employment in 2027” displayed in Table V.53, assumes that all LVDT distribution transformer manufacturing remains in the U.S. The lower range of the “Potential Change in

Total Direct Employment in 2027”, assumes that 30 percent of distribution transformers using amorphous cores are re-located to foreign countries, either due to amorphous core production that is outsourced to core only manufacturers located in foreign countries or LVDT distribution transformer manufacturers re-locating their distribution transformer production to foreign countries.

Medium-Voltage Dry-Type Distribution Transformers

TABLE V.54—DOMESTIC EMPLOYMENT FOR MEDIUM-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS IN 2027

	No-new-standards case	Trial standard level				
		1	2	3	4	5
Domestic Production Workers in 2027 ....	275	275	284	315	330	356
Domestic Non-Production Workers in 2027 .....	98	98	101	112	117	126
Total Direct Employment in 2027 .....	373	373	385	427	447	482
Potential Changes in Total Direct Employment in 2027 .....		0	0–12	(63)–54	(69)–74	(83)–109

Using the estimated labor content from the GRIM combined with data from the 2019 ASM, DOE estimates that there would be approximately 275 domestic production workers, and 98 domestic non-production workers involved in MVDT distribution transformer manufacturing in 2027 in the absence of amended energy conservation standards. Table V.54 shows the range of the impacts of energy conservation standards on U.S. production on MVDT distribution transformers.

DOE used the same methodology to estimate the potential impacts to domestic employment for MVDT distribution transformer manufacturing that was used for liquid-immersed distribution transformer manufacturing. The upper range of the “Potential Change in Total Direct Employment in 2027” displayed in Table V.54, assumes that all MVDT distribution transformer manufacturing remains in the U.S. The lower range of the “Potential Change in Total Direct Employment in 2027”, assumes that 30 percent of distribution transformers using amorphous cores are re-located to foreign countries, either due to amorphous core production that is outsourced to core only manufacturers located in foreign countries or MVDT distribution transformer manufacturers re-locating their distribution transformer production to foreign countries.

DOE requests comment on the estimated potential domestic employment impacts on distribution transformer manufacturers presented in this NOPR.

#### c. Impacts on Manufacturing Capacity

The prices of raw materials currently used in distribution transformers, such as GOES, copper, and aluminum, have all experienced a significant increase in price starting at the beginning of 2021. The availability of these commodities remains a significant concern with distribution transformer manufacturers. As previously stated in IV.J.3.a, steel producers are shifting production away from GOES suited for distribution transformer core manufacturing to non-grain-oriented steels suited for electric vehicle production. However, amorphous steel has not seen the same significant increase in price as GOES since the beginning of 2021.

The availability of amorphous steel is a concern for many distribution transformer manufacturers. Based on information received during manufacturer interviews some distribution transformer manufacturers suggested that there would not be enough amorphous steel available to be

used in all or even most distribution transformers currently sold in the U.S. Other distribution transformer manufacturers and steel suppliers interviewed stated that, while the current capacity of amorphous steel does not exist to supply the majority of the steel used in distribution transformer cores, steel manufacturers are capable of significantly increasing their amorphous steel production if there is sufficient market demand for amorphous steel.

While the availability of both GOES and amorphous steel is a concern for many distribution transformer manufacturers, steel suppliers should be able to meet the market demand for amorphous steel for all TSLs analyzed given the three-year compliance period for distribution transformers. Steel manufacturers should be able to significantly increase their supply of amorphous steel if they know there will be an increase in the demand for this material due to energy conservation standards for distribution transformers. See section V.C for a more detailed discussion of the global supply of steel.

DOE requests comment on the potential availability of either amorphous steel, grain-oriented electrical steel, or any other materials that may be needed to meet any of the analyzed energy conservation standards in this rulemaking. More specifically, DOE requests comment on steel manufacturers’ ability to increase supply of amorphous steel in reaction to increased demand for amorphous steel as a result of increased energy conservation standards for distribution transformers.

#### d. Impacts on Competition

EPCA directs DOE to consider any lessening of competition that is likely to result from imposition of standards. It further directs the Attorney General to determine the impacts, if any, of any lessening of competition. The competitive analysis includes an assessment of the impacts to smaller, yet significant, manufacturers. DOE bases its assessment on manufacturing cost data and on information collected from interviews with manufacturers. The manufacturer interviews focus on gathering information that would help in assessing asymmetrical cost increases to some manufacturers, increased proportion of fixed costs potentially increasing business risks, and potential barriers to market entry (e.g., proprietary technologies).

As discussed in section IV.J.3, DOE interviewed a wide variety of distribution transformer manufacturers, including liquid-immersed distribution

transformer manufacturers, LVDT distribution transformer manufacturers, MVDT distribution transformer manufacturers, small businesses, and steel suppliers. During these manufacturer interviews DOE asked manufacturers if energy conservation standards could result in a change in industry competition. Some manufacturers stated that there is a possibility that smaller manufacturers may exit the market or their market share may decrease, if these businesses are not able to make the investments to upgrade their production equipment or to create new equipment designs in order to comply with energy conservation standards. See section VI.B, for a complete discussion on the potential impacts to small businesses.

Based on the market and technology assessment conducted for this NOPR analysis, DOE identified 29 manufacturers of distribution transformers covered by this rulemaking. See chapter 3 of this NOPR TSD for a complete list of the distribution transformer manufacturers. The distribution transformer market has a handful of major manufacturers for each equipment type (i.e., liquid-immersed, LVDT, MVDT). Transformer core sourcing is a major driver of transformer manufacturing strategy and competitiveness which may be impacted by the standards level. Typically, manufacturers with larger market shares produce most of their own cores and manufacturers with smaller market shares purchase the cores used in their distribution transformers. The Department does not believe the proposed standard will alter current core make-versus-buy decisions. The Department expects that manufacturers with larger market shares will make the large investments needed to convert their core production to amorphous steel. Manufacturers with smaller market shares that do not invest in amorphous core manufacturing will continue to have the option to source their cores. DOE does not anticipate a significant change in competition due to energy conservation standards as the business model and competitive position for most distribution transformer manufacturers will remain the same after compliance with energy conservation standards.

#### e. Impacts on Subgroups of Manufacturers

As discussed in section IV.J.1 of this document, using average cost assumptions to develop an industry cash-flow estimate may not be adequate for assessing differential impacts among manufacturer subgroups. Small

manufacturers, niche manufacturers, and manufacturers exhibiting a cost structure substantially different from the industry average could be affected disproportionately. DOE used the results of the industry characterization to group manufacturers exhibiting similar characteristics. Consequently, DOE considered four manufacturer subgroups in the MIA: liquid-immersed, LVDT, MVDT, and small manufacturers as a subgroup for a separate impact analysis. DOE discussed the potential impacts on liquid-immersed, LVDT, and MVDT distribution transformer manufacturers separately in sections V.B.2.a and V.B.2.b.

For the small business subgroup analysis, DOE applied the small business size standards published by the Small Business Administration (“SBA”) to determine whether a company is considered a small business. The size standards are codified at 13 CFR part 121. To be categorized as a small business under NAICS code 335311, “power, distribution, and specialty transformer manufacturing,” a

distribution transformer manufacturer and its affiliates may employ a maximum of 750 employees. The 750-employee threshold includes all employees in a business’s parent company and any other subsidiaries. For a discussion of the impacts on the small manufacturer subgroup, see the Regulatory Flexibility Analysis in section VI.B.

f. Cumulative Regulatory Burden

One aspect of assessing manufacturer burden involves looking at the cumulative impact of multiple DOE standards and the product-specific regulatory actions of other Federal agencies that affect the manufacturers of a covered product or equipment. While any one regulation may not impose a significant burden on manufacturers, the combined effects of several existing or impending regulations may have serious consequences for some manufacturers, groups of manufacturers, or an entire industry. Assessing the impact of a single regulation may overlook this cumulative regulatory

burden. In addition to energy conservation standards, other regulations can significantly affect manufacturers’ financial operations. Multiple regulations affecting the same manufacturer can strain profits and lead companies to abandon product lines or markets with lower expected future returns than competing products. For these reasons, DOE conducts an analysis of cumulative regulatory burden as part of its rulemakings pertaining to appliance efficiency. DOE requests information regarding the impact of cumulative regulatory burden on manufacturers of distribution transformers associated with multiple DOE standards or product-specific regulatory actions of other Federal agencies.

DOE evaluates product-specific regulations that will take effect approximately 3 years before or after the estimated 2027 compliance date of any amended energy conservation standards for distribution transformers. This information is presented in Table V.55.

TABLE V.55—COMPLIANCE DATES AND EXPECTED CONVERSION EXPENSES OF FEDERAL ENERGY CONSERVATION STANDARDS AFFECTING DISTRIBUTION TRANSFORMER MANUFACTURERS

Federal energy conservation standard	Number of manufacturers *	Number of manufacturers affected from this rule **	Approx. standards year	Industry conversion costs (millions)	Industry conversion costs/product revenue ***
Dedicated-Purpose Pool Pump Motors, 87 FR 37122 (June 21, 2022) .....	5	1	2026	\$46.2 (2020\$)	2.8%

\* This column presents the total number of manufacturers identified in the energy conservation standard rule contributing to cumulative regulatory burden.

\*\* This column presents the number of manufacturers producing distribution transformers that are also listed as manufacturers in the listed energy conservation standard contributing to cumulative regulatory burden.

\*\*\* This column presents industry conversion costs as a percentage of product revenue during the conversion period. Industry conversion costs are the upfront investments manufacturers must make to sell compliant products/equipment. The revenue used for this calculation is the revenue from just the covered product/equipment associated with each row. The conversion period is the time frame over which conversion costs are made and lasts from the publication year of the final rule to the compliance year of the energy conservation standard. The conversion period typically ranges from 3 to 5 years, depending on the rulemaking.

In addition to the rulemaking listed in Table V.55, DOE has ongoing rulemakings for other products or equipment that distribution transformer manufacturers produce, including battery chargers;<sup>103</sup> external power supplies;<sup>104</sup> ceiling fan light kits;<sup>105</sup> electric motors;<sup>106</sup> residential conventional cooking products;<sup>107</sup>

<sup>103</sup> [www.regulations.gov/docket/EERE-2008-BT-STD-0005](http://www.regulations.gov/docket/EERE-2008-BT-STD-0005).

<sup>104</sup> [www.regulations.gov/docket/EERE-2020-BT-STD-0006](http://www.regulations.gov/docket/EERE-2020-BT-STD-0006).

<sup>105</sup> [www.regulations.gov/docket/EERE-2019-BT-STD-0040](http://www.regulations.gov/docket/EERE-2019-BT-STD-0040).

<sup>106</sup> [www.regulations.gov/docket/EERE-2020-BT-STD-0007](http://www.regulations.gov/docket/EERE-2020-BT-STD-0007).

<sup>107</sup> [www.regulations.gov/docket/EERE-2014-BT-STD-0005](http://www.regulations.gov/docket/EERE-2014-BT-STD-0005).

dishwashers;<sup>108</sup> dehumidifiers;<sup>109</sup> miscellaneous refrigeration products;<sup>110</sup> and residential clothes washers.<sup>111</sup> If DOE proposes or finalizes any energy conservation standards for these products or equipment prior to finalizing energy conservation standards for distribution transformers, DOE will include the energy conservation standards for these other products or equipment as part of the cumulative

<sup>108</sup> [www.regulations.gov/docket/EERE-2019-BT-STD-0039](http://www.regulations.gov/docket/EERE-2019-BT-STD-0039).

<sup>109</sup> [www.regulations.gov/docket/EERE-2019-BT-STD-0043](http://www.regulations.gov/docket/EERE-2019-BT-STD-0043).

<sup>110</sup> [www.regulations.gov/docket/EERE-2020-BT-STD-0039](http://www.regulations.gov/docket/EERE-2020-BT-STD-0039).

<sup>111</sup> [www.regulations.gov/docket/EERE-2017-BT-STD-0014](http://www.regulations.gov/docket/EERE-2017-BT-STD-0014).

regulatory burden for the distribution transformers final rule.

3. National Impact Analysis

This section presents DOE’s estimates of the national energy savings and the NPV of consumer benefits that would result from each of the TSLs considered as potential amended standards.

a. Significance of Energy Savings

To estimate the energy savings attributable to potential amended standards for distribution transformers, DOE compared their energy consumption under the no-new-standards case to their anticipated energy consumption under each TSL. The savings are measured over the entire lifetime of products purchased in

the 30-year period that begins in the first full year of anticipated compliance with amended standards (2027–2056). Table V.56 presents DOE’s projections of the national energy savings for each

TSL considered for distribution transformers, the results showing DOE’s proposed standard are in bold. Savings are reported for each of the equipment classes as defined in Section IV.A.2. The

savings were calculated using the approach described in section IV.H of this document.

TABLE V.56—CUMULATIVE NATIONAL ENERGY SOURCES FOR DISTRIBUTION TRANSFORMERS BY EQUIPMENT CLASS; 30 YEARS OF SHIPMENT, (2027–2056)

	Standard level				
	1	2	3	4	5
<b>Primary Energy Savings (Quads)</b>					
Liquid-Immersed:					
Equipment Class 1 .....	2.16	3.16	4.45	<b>4.75</b>	4.89
Equipment Class 2 .....	0.91	1.65	2.63	<b>2.97</b>	3.17
Equipment Class 12 .....	n.a.	n.a.	n.a.	n.a.	0.08
Liquid-Immersed Total .....	3.06	4.80	7.09	<b>7.72</b>	8.14
Low-Voltage Dry-Type:					
Equipment Class 3 .....	0.02	0.03	0.05	0.09	<b>0.12</b>
Equipment Class 4 .....	0.34	0.48	0.77	2.10	<b>2.25</b>
Low-Voltage Dry-Type Total .....	0.35	0.52	0.82	2.19	2.37
Medium-Voltage Dry-Type:					
Equipment Class 5 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 6 .....	0.00	<b>0.00</b>	0.01	0.02	0.03
Equipment Class 7 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 8 .....	0.05	<b>0.07</b>	0.23	0.29	0.35
Equipment Class 9 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 10 .....	0.02	<b>0.04</b>	0.14	0.19	0.22
Medium-Voltage Dry-Type Total .....	0.08	<b>0.11</b>	0.39	0.51	0.61
<b>FFC Energy Savings (Quads)</b>					
Liquid-Immersed:					
Equipment Class 1 .....	2.24	3.28	4.63	<b>4.94</b>	5.08
Equipment Class 2 .....	0.94	1.71	2.73	<b>3.08</b>	3.29
Equipment Class 12 .....	0.00	0.00	0.00	<b>0.00</b>	0.09
Liquid-Immersed Total .....	3.18	4.99	7.36	<b>8.02</b>	8.45
Low-Voltage Dry-Type:					
Equipment Class 3 .....	0.02	0.03	0.05	0.09	<b>0.12</b>
Equipment Class 4 .....	0.35	0.50	0.80	2.19	<b>2.34</b>
Low-Voltage Dry-Type Total .....	0.37	0.54	0.85	2.28	<b>2.47</b>
Medium-Voltage Dry-Type:					
Equipment Class 5 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 6 .....	0.00	<b>0.00</b>	0.01	0.02	0.03
Equipment Class 7 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 8 .....	0.05	<b>0.07</b>	0.24	0.30	0.36
Equipment Class 9 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 10 .....	0.02	<b>0.04</b>	0.15	0.20	0.23
Medium-Voltage Dry-Type Total .....	0.08	<b>0.12</b>	0.40	0.53	0.63

OMB Circular A–4<sup>112</sup> requires agencies to present analytical results, including separate schedules of the monetized benefits and costs that show the type and timing of benefits and

costs. Circular A–4 also directs agencies to consider the variability of key elements underlying the estimates of benefits and costs. For this rulemaking, DOE undertook a sensitivity analysis using 9 years, rather than 30 years, of product shipments. The choice of a 9-year period is a proxy for the timeline in EPCA for the review of certain energy conservation standards and potential

revision of and compliance with such revised standards.<sup>113</sup> The review

<sup>113</sup> Section 325(m) of EPCA requires DOE to review its standards at least once every 6 years, and requires, for certain products, a 3-year period after any new standard is promulgated before compliance is required, except that in no case may any new standards be required within 6 years of the compliance date of the previous standards. While adding a 6-year review to the 3-year compliance

<sup>112</sup> U.S. Office of Management and Budget. *Circular A–4: Regulatory Analysis*. September 17, 2003. [https://www.whitehouse.gov/wp-content/uploads/legacy\\_drupal\\_files/omb/circulars/A4/a-4.pdf](https://www.whitehouse.gov/wp-content/uploads/legacy_drupal_files/omb/circulars/A4/a-4.pdf) (last accessed August 26, 2022).



timeframe established in EPCA is generally not synchronized with the product lifetime, product manufacturing cycles, or other factors specific to distribution transformers. Thus, such results are presented for informational

purposes only and are not indicative of any change in DOE’s analytical methodology. The NES sensitivity analysis results based on a 9-year analytical period are presented in Table V.57. The impacts are counted over the

lifetime of distribution transformers purchased in 2027–2036, the results showing DOE’s proposed standard are in bold.

TABLE V.57—CUMULATIVE NATIONAL ENERGY SAVINGS FOR DISTRIBUTION TRANSFORMERS; 9 YEARS OF SHIPMENTS, (2027–2036)

	Standard level				
	1	2	3	4	5
<b>Primary Energy Savings (Quads)</b>					
Liquid-Immersed:					
Equipment Class 1 .....	0.62	0.90	1.27	<b>1.36</b>	1.39
Equipment Class 2 .....	0.26	0.47	0.75	<b>0.85</b>	0.90
Equipment Class 12 .....	n.a.	n.a.	n.a.	n.a.	0.02
Liquid-Immersed Total .....	0.87	1.37	2.02	<b>2.20</b>	2.32
Low-Voltage Dry-Type:					
Equipment Class 3 .....	0.00	0.01	0.01	0.02	<b>0.03</b>
Equipment Class 4 .....	0.10	0.14	0.22	0.60	<b>0.64</b>
Low-Voltage Dry-Type Total .....	0.10	0.15	0.23	0.63	<b>0.68</b>
Medium-Voltage Dry-Type:					
Equipment Class 5 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 6 .....	0.00	<b>0.00</b>	0.00	0.01	0.01
Equipment Class 7 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 8 .....	0.01	<b>0.02</b>	0.07	0.08	0.10
Equipment Class 9 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 10 .....	0.01	<b>0.01</b>	0.04	0.05	0.06
Medium-Voltage Dry-Type Total .....	0.02	<b>0.03</b>	0.11	0.14	0.17
<b>FFC Energy Savings (Quads)</b>					
Liquid-Immersed:					
Equipment Class 1 .....	0.64	0.93	1.32	<b>1.41</b>	1.45
Equipment Class 2 .....	0.27	0.49	0.78	<b>0.88</b>	0.94
Equipment Class 12 .....	n.a.	n.a.	n.a.	n.a.	0.03
Liquid-Immersed Total .....	0.91	1.42	2.10	<b>2.29</b>	2.41
Low-Voltage Dry-Type:					
Equipment Class 3 .....	0.00	0.01	0.01	0.03	<b>0.04</b>
Equipment Class 4 .....	0.10	0.14	0.23	0.62	<b>0.67</b>
Low-Voltage Dry-Type Total .....	0.11	0.15	0.24	0.65	<b>0.70</b>
Medium-Voltage Dry-Type:					
Equipment Class 5 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 6 .....	0.00	<b>0.00</b>	0.00	0.01	0.01
Equipment Class 7 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 8 .....	0.02	<b>0.02</b>	0.07	0.09	0.10
Equipment Class 9 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 10 .....	0.01	<b>0.01</b>	0.04	0.06	0.07
Medium-Voltage Dry-Type Total .....	0.02	<b>0.03</b>	0.12	0.15	0.18

b. Net Present Value of Consumer Costs and Benefits

DOE estimated the cumulative NPV of the total costs and savings for consumers that would result from the

TSLs considered for distribution transformers. In accordance with OMB’s guidelines on regulatory analysis,<sup>114</sup> DOE calculated NPV using both a 7-percent and a 3-percent real discount

rate. Table V.58 shows the consumer NPV results with impacts counted over the lifetime of products purchased in 2027–2056, the results showing DOE’s proposed standard are in bold.

period adds up to 9 years. DOE notes that it may undertake reviews at any time within the 6 year period and that the 3-year compliance date may yield to the 6-year backstop. A 9-year analysis

period may not be appropriate given the variability that occurs in the timing of standards reviews and the fact that for some products, the compliance period is 5 years rather than 3 years.

<sup>114</sup> U.S. Office of Management and Budget. *Circular A-4: Regulatory Analysis*. September 17, 2003. [www.whitehouse.gov/omb/circulars\\_a004\\_a-4/](http://www.whitehouse.gov/omb/circulars_a004_a-4/) (last accessed April 15, 2022).

TABLE V.58—CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR DISTRIBUTION TRANSFORMERS; 30 YEARS OF SHIPMENTS, BILLION 2021\$, (2027–2056)

	Standard level				
	1	2	3	4	5
<b>3 percent Discount Rate</b>					
Liquid-Immersed:					
Equipment Class 1 .....	2.55	3.34	4.00	<b>3.45</b>	–4.04
Equipment Class 2 .....	0.43	0.81	1.50	<b>1.84</b>	–2.10
Equipment Class 12 .....	n.a.	n.a.	n.a.	n.a.	–0.10
Liquid-Immersed Total .....	2.98	4.15	5.50	<b>5.30</b>	–6.25
Low-Voltage Dry-Type:					
Equipment Class 3 .....	0.07	0.13	0.15	0.31	<b>0.52</b>
Equipment Class 4 .....	1.41	1.98	1.72	9.41	<b>9.11</b>
Low-Voltage Dry-Type Total .....	1.48	2.11	1.87	9.72	<b>9.63</b>
Medium-Voltage Dry-Type:					
Equipment Class 5 .....	0.00	<b>0.00</b>	0.00	0.00	0.01
Equipment Class 6 .....	0.01	<b>0.01</b>	0.02	0.02	0.04
Equipment Class 7 .....	0.00	<b>0.00</b>	0.00	0.01	0.01
Equipment Class 8 .....	0.25	<b>0.22</b>	0.76	0.77	0.54
Equipment Class 9 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 10 .....	0.00	– <b>0.02</b>	0.46	0.50	0.36
Medium-Voltage Dry-Type Total .....	0.26	<b>0.21</b>	1.25	1.30	0.96
<b>7 percent Discount Rate</b>					
Liquid-Immersed:					
Equipment Class 1 .....	0.78	0.94	0.82	<b>0.24</b>	–4.41
Equipment Class 2 .....	0.00	0.06	0.07	<b>0.01</b>	–2.60
Equipment Class 12 .....	n.a.	n.a.	n.a.	n.a.	–0.10
Liquid-Immersed Total .....	0.78	1.00	0.89	<b>0.26</b>	–7.11
Low-Voltage Dry-Type:					
Equipment Class 3 .....	0.02	0.04	0.04	0.07	<b>0.13</b>
Equipment Class 4 .....	0.50	0.70	0.35	2.72	<b>2.50</b>
Low-Voltage Dry-Type Total .....	0.53	0.74	0.39	2.79	<b>2.63</b>
Medium-Voltage Dry-Type:					
Equipment Class 5 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 6 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 7 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 8 .....	0.10	<b>0.07</b>	0.18	0.15	0.01
Equipment Class 9 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 10 .....	0.01	– <b>0.04</b>	0.08	0.08	0.00
Medium-Voltage Dry-Type Total .....	0.09	<b>0.04</b>	0.27	0.23	0.00

The NPV results based on the aforementioned 9-year analytical period are presented in Table V.59. The impacts are counted over the lifetime of

products purchased in 2027–2036. As mentioned previously, such results are presented for informational purposes only and are not indicative of any

change in DOE's analytical methodology or decision criteria.

TABLE V.59—CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR DISTRIBUTION TRANSFORMERS; 9 YEARS OF SHIPMENTS, BILLION 2021\$, (2027–2036)

	Standard level				
	1	2	3	4	5
<b>3 percent Discount Rate</b>					
Liquid-Immersed:					
Equipment Class 1 .....	0.99	1.30	1.56	<b>1.36</b>	–1.50
Equipment Class 2 .....	0.17	0.32	0.59	<b>0.73</b>	–0.78

TABLE V.59—CUMULATIVE NET PRESENT VALUE OF CONSUMER BENEFITS FOR DISTRIBUTION TRANSFORMERS; 9 YEARS OF SHIPMENTS, BILLION 2021\$, (2027–2036)—Continued

	Standard level				
	1	2	3	4	5
Equipment Class 12 .....	n.a.	n.a.	n.a.	n.a.	– 0.04
Liquid-Immersed Total .....	1.16	1.62	2.15	<b>2.09</b>	– 2.32
Low-Voltage Dry-Type:					
Equipment Class 3 .....	0.03	0.05	0.06	0.12	<b>0.20</b>
Equipment Class 4 .....	0.55	0.77	0.68	3.69	<b>3.57</b>
Low-Voltage Dry-Type Total .....	0.58	0.82	0.74	3.81	<b>3.77</b>
Medium-Voltage Dry-Type:					
Equipment Class 5 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 6 .....	0.00	<b>0.00</b>	0.01	0.01	0.02
Equipment Class 7 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 8 .....	0.10	<b>0.09</b>	0.30	0.30	0.22
Equipment Class 9 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 10 .....	0.00	– <b>0.01</b>	0.18	0.20	0.15
Medium-Voltage Dry-Type Total .....	0.10	<b>0.08</b>	0.49	0.51	0.39
<b>7 percent Discount Rate</b>					
Liquid-Immersed:					
Equipment Class 1 .....	0.40	0.49	0.43	<b>0.14</b>	– 2.24
Equipment Class 2 .....	0.00	0.03	0.04	<b>0.02</b>	– 1.32
Equipment Class 12 .....	n.a.	n.a.	n.a.	n.a.	– 0.05
Liquid-Immersed Total .....	0.41	0.52	0.48	0.15	– 3.61
Low-Voltage Dry-Type:					
Equipment Class 3 .....	0.01	0.02	0.02	0.04	<b>0.07</b>
Equipment Class 4 .....	0.26	0.36	0.19	1.43	<b>1.32</b>
Low-Voltage Dry-Type Total .....	0.27	0.39	0.21	1.46	<b>1.38</b>
Medium-Voltage Dry-Type:					
Equipment Class 5 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 6 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 7 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 8 .....	0.05	<b>0.04</b>	0.10	0.08	0.01
Equipment Class 9 .....	0.00	<b>0.00</b>	0.00	0.00	0.00
Equipment Class 10 .....	– 0.01	– <b>0.02</b>	0.05	0.04	0.00
Medium-Voltage Dry-Type Total .....	0.04	<b>0.02</b>	0.14	0.12	0.01

The previous results reflect the use of a default trend to estimate the change in price for distribution transformers over the analysis period (see section IV.F.1 of this document). DOE also conducted a sensitivity analysis that considered one scenario with a lower rate of price decline than the reference case and one scenario with a higher rate of price decline than the reference case. The results of these alternative cases are presented in appendix 10C of the NOPR TSD. In the high-price-decline case, the NPV of consumer benefits is higher than in the default case. In the low-price-decline case, the NPV of consumer benefits is lower than in the default case.

c. Indirect Impacts on Employment

It is estimated that that amended energy conservation standards for

distribution transformers would reduce energy expenditures for consumers of those products, with the resulting net savings being redirected to other forms of economic activity. These expected shifts in spending and economic activity could affect the demand for labor. As described in section IV.N of this document, DOE used an input/output model of the U.S. economy to estimate indirect employment impacts of the TSLs that DOE considered. There are uncertainties involved in projecting employment impacts, especially changes in the later years of the analysis. Therefore, DOE generated results for near-term timeframes (2027–2031), where these uncertainties are reduced.

The results suggest that the proposed standards would be likely to have a negligible impact on the net demand for

labor in the economy. The net change in jobs is so small that it would be imperceptible in national labor statistics and might be offset by other, unanticipated effects on employment. Chapter 16 of the NOPR TSD presents detailed results regarding anticipated indirect employment impacts.

4. Impact on Utility or Performance of Products

As discussed in section IV.C.1.b of this document, DOE has tentatively concluded that the standards proposed in this NOPR would not lessen the utility or performance of the distribution transformers under consideration in this rulemaking. Manufacturers of these products currently offer units that meet or exceed the proposed standards.

5. Impact of Any Lessening of Competition

DOE considered any lessening of competition that would be likely to result from new or amended standards. As part of this consideration, DOE weighed the effects on markets for both component parts (see IV.C.3.a) and distribution transformer equipment (see IV.A.6). DOE's preliminary finding is that this rule, if finalized as proposed, would not significantly affect competition in the market for distribution transformers. See section V.B.5 for a complete discussion on industry competition. As discussed in section III.E.1.e, the Attorney General determines the impact, if any, of any lessening of competition likely to result from a proposed standard, and transmits such determination in writing to the Secretary, together with an analysis of the nature and extent of such impact. To assist the Attorney General in making this determination, DOE has provided

DOJ with copies of this NOPR and the accompanying TSD for review. DOE will consider DOJ's comments on the proposed rule in determining whether to proceed to a final rule. DOE will publish and respond to DOJ's comments in that document. DOE invites comment from the public regarding the competitive impacts that are likely to result from this proposed rule. In addition, stakeholders may also provide comments separately to DOJ regarding these potential impacts. See the ADDRESSES section for information to send comments to DOJ.

6. Need of the Nation to Conserve Energy

Enhanced energy efficiency, where economically justified, improves the Nation's energy security, strengthens the economy, and reduces the environmental impacts (costs) of energy production. Reduced electricity demand due to energy conservation standards is

also likely to reduce the cost of maintaining the reliability of the electricity system, particularly during peak-load periods. Chapter 15 in the NOPR TSD presents the estimated impacts on electricity generating capacity, relative to the no-new-standards case, for the TSLs that DOE considered in this rulemaking.

Energy conservation resulting from potential energy conservation standards for distribution transformers is expected to yield environmental benefits in the form of reduced emissions of certain air pollutants and greenhouse gases. Table V.60 through Table V.63 provides DOE's estimate of cumulative emissions reductions expected to result from the TSLs considered in this rulemaking. The emissions were calculated using the multipliers discussed in section IV.K. DOE reports annual emissions reductions for each TSL in chapter 13 of the NOPR TSD.

TABLE V.60—CUMULATIVE EMISSIONS REDUCTION FOR ALL DISTRIBUTION TRANSFORMERS SHIPPED IN 2027–2056 AT PROPOSED STANDARD LEVELS

Power Sector Emissions	
CO <sub>2</sub> (million metric tons) .....	312.0
CH <sub>4</sub> (thousand tons) .....	21.3
N <sub>2</sub> O (thousand tons) .....	2.9
NO <sub>x</sub> (thousand tons) .....	146.0
SO <sub>2</sub> (thousand tons) .....	129.2
Hg (tons) .....	0.8
Upstream Emissions	
CO <sub>2</sub> (million metric tons) .....	25.5
CH <sub>4</sub> (thousand tons) .....	2419.9
N <sub>2</sub> O (thousand tons) .....	0.1
NO <sub>x</sub> (thousand tons) .....	386.9
SO <sub>2</sub> (thousand tons) .....	1.7
Hg (tons) .....	0.0
Total FFC Emissions	
CO <sub>2</sub> (million metric tons) .....	337.6
CH <sub>4</sub> (thousand tons) .....	2441.2
N <sub>2</sub> O (thousand tons) .....	3.0
NO <sub>x</sub> (thousand tons) .....	532.9
SO <sub>2</sub> (thousand tons) .....	130.9
Hg (tons) .....	0.9

Negative values refer to an increase in emissions.

TABLE V.61—CUMULATIVE EMISSIONS REDUCTION FOR DISTRIBUTION TRANSFORMERS FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS SHIPPED IN 2027–2056

	Trial standard level				
	1	2	3	4	5
Power Sector Emissions					
CO <sub>2</sub> (million metric tons) .....	94.2	147.8	217.7	<b>237.0</b>	249.4
CH <sub>4</sub> (thousand tons) .....	6.4	10.1	14.8	<b>16.2</b>	17.0
N <sub>2</sub> O (thousand tons) .....	0.9	1.4	2.0	<b>2.2</b>	2.3
NO <sub>x</sub> (thousand tons) .....	44.1	69.2	101.9	<b>110.9</b>	116.7
SO <sub>2</sub> (thousand tons) .....	39.1	61.4	90.5	<b>98.4</b>	103.5

TABLE V.61—CUMULATIVE EMISSIONS REDUCTION FOR DISTRIBUTION TRANSFORMERS FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS SHIPPED IN 2027–2056—Continued

	Trial standard level				
	1	2	3	4	5
Hg (tons) .....	0.3	0.4	0.6	<b>0.6</b>	0.7
<b>Upstream Emissions</b>					
CO <sub>2</sub> (million metric tons) .....	7.7	12.0	17.7	<b>19.3</b>	20.3
CH <sub>4</sub> (thousand tons) .....	726.6	1139.8	1680.6	<b>1830.4</b>	1929.9
N <sub>2</sub> O (thousand tons) .....	0.0	0.1	0.1	<b>0.1</b>	0.1
NO <sub>x</sub> (thousand tons) .....	116.2	182.2	268.7	<b>292.7</b>	308.6
SO <sub>2</sub> (thousand tons) .....	0.5	0.8	1.2	<b>1.3</b>	1.3
Hg (tons) .....	0.0	0.0	0.0	<b>0.0</b>	0.0
<b>Total FFC Emissions</b>					
CO <sub>2</sub> (million metric tons) .....	101.9	159.8	235.4	<b>256.3</b>	269.7
CH <sub>4</sub> (thousand tons) .....	733.1	1149.8	1695.5	<b>1846.6</b>	1946.9
N <sub>2</sub> O (thousand tons) .....	0.9	1.4	2.1	<b>2.3</b>	2.4
NO <sub>x</sub> (thousand tons) .....	160.3	251.4	370.6	<b>403.6</b>	425.2
SO <sub>2</sub> (thousand tons) .....	39.7	62.2	91.6	<b>99.7</b>	104.8
Hg (tons) .....	0.3	0.4	0.6	<b>0.7</b>	0.7

Negative values refer to an increase in emissions.

TABLE V.62—CUMULATIVE EMISSIONS REDUCTION FOR DISTRIBUTION TRANSFORMERS FOR LOW-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS SHIPPED IN 2027–2056

	Trial standard level				
	1	2	3	4	5
<b>Power Sector Emissions</b>					
CO <sub>2</sub> (million metric tons) .....	10.7	15.6	24.8	66.1	<b>71.6</b>
CH <sub>4</sub> (thousand tons) .....	0.7	1.1	1.7	4.5	<b>4.9</b>
N <sub>2</sub> O (thousand tons) .....	0.1	0.1	0.2	0.6	<b>0.7</b>
NO <sub>x</sub> (thousand tons) .....	5.0	7.3	11.6	30.9	<b>33.5</b>
SO <sub>2</sub> (thousand tons) .....	4.4	6.4	10.2	27.1	<b>29.4</b>
Hg (tons) .....	0.0	0.0	0.1	0.2	<b>0.2</b>
<b>Upstream Emissions</b>					
CO <sub>2</sub> (million metric tons) .....	0.9	1.3	2.0	5.5	<b>5.9</b>
CH <sub>4</sub> (thousand tons) .....	84.0	122.4	194.5	519.1	<b>562.4</b>
N <sub>2</sub> O (thousand tons) .....	0.0	0.0	0.0	0.0	<b>0.0</b>
NO <sub>x</sub> (thousand tons) .....	13.4	19.6	31.1	83.0	<b>89.9</b>
SO <sub>2</sub> (thousand tons) .....	0.1	0.1	0.1	0.4	<b>0.4</b>
Hg (tons) .....	0.0	0.0	0.0	0.0	<b>0.0</b>
<b>Total FFC Emissions</b>					
CO <sub>2</sub> (million metric tons) .....	11.6	16.9	26.8	71.6	<b>77.6</b>
CH <sub>4</sub> (thousand tons) .....	84.8	123.4	196.2	523.5	<b>567.3</b>
N <sub>2</sub> O (thousand tons) .....	0.1	0.2	0.2	0.6	<b>0.7</b>
NO <sub>x</sub> (thousand tons) .....	18.4	26.9	42.7	113.9	<b>123.4</b>
SO <sub>2</sub> (thousand tons) .....	4.5	6.5	10.3	27.5	<b>29.8</b>
Hg (tons) .....	0.0	0.0	0.1	0.2	<b>0.2</b>

Negative values refer to an increase in emissions.

TABLE V.63—CUMULATIVE EMISSIONS REDUCTION FOR DISTRIBUTION TRANSFORMERS FOR MEDIUM-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS SHIPPED IN 2027–2056

	Trial Standard Level				
	1	2	3	4	5
<b>Power Sector Emissions</b>					
CO <sub>2</sub> (million metric tons) .....	2.3	<b>3.4</b>	11.7	15.2	18.2
CH <sub>4</sub> (thousand tons) .....	0.2	<b>0.2</b>	0.8	1.0	1.2
N <sub>2</sub> O (thousand tons) .....	0.0	<b>0.0</b>	0.1	0.1	0.2

TABLE V.63—CUMULATIVE EMISSIONS REDUCTION FOR DISTRIBUTION TRANSFORMERS FOR MEDIUM-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS SHIPPED IN 2027–2056—Continued

	Trial Standard Level				
	1	2	3	4	5
NO <sub>x</sub> (thousand tons) .....	1.1	1.6	5.5	7.1	8.5
SO <sub>2</sub> (thousand tons) .....	1.0	1.4	4.8	6.2	7.5
Hg (tons) .....	0.0	0.0	0.0	0.0	0.0
<b>Upstream Emissions</b>					
CO <sub>2</sub> (million metric tons) .....	0.2	0.3	1.0	1.3	1.5
CH <sub>4</sub> (thousand tons) .....	18.4	27.1	92.3	120.0	143.7
N <sub>2</sub> O (thousand tons) .....	0.0	0.0	0.0	0.0	0.0
NO <sub>x</sub> (thousand tons) .....	2.9	4.3	14.8	19.2	23.0
SO <sub>2</sub> (thousand tons) .....	0.0	0.0	0.1	0.1	0.1
Hg (tons) .....	0.0	0.0	0.0	0.0	0.0
<b>Total FFC Emissions</b>					
CO <sub>2</sub> (million metric tons) .....	2.5	3.7	12.7	16.5	19.7
CH <sub>4</sub> (thousand tons) .....	18.6	27.3	93.1	121.1	144.9
N <sub>2</sub> O (thousand tons) .....	0.0	0.0	0.1	0.1	0.2
NO <sub>x</sub> (thousand tons) .....	4.0	5.9	20.2	26.3	31.5
SO <sub>2</sub> (thousand tons) .....	1.0	1.4	4.9	6.3	7.6
Hg (tons) .....	0.0	0.0	0.0	0.0	0.0

Negative values refer to an increase in emissions.

As part of the analysis for this rulemaking, DOE estimated monetary benefits likely to result from the reduced emissions of CO<sub>2</sub> that DOE estimated for each of the considered

TSLs for distribution transformers. Section IV.L of this document discusses the SC–CO<sub>2</sub> values that DOE used. Table V.64 presents the value of CO<sub>2</sub> emissions reduction at each TSL for

each of the SC–CO<sub>2</sub> cases. The time-series of annual values is presented for the proposed TSL in chapter 14 of the NOPR TSD.

TABLE V.64—PRESENT VALUE OF CO<sub>2</sub> EMISSIONS REDUCTION FOR DISTRIBUTION TRANSFORMERS SHIPPED IN 2027–2056

TSL	SC–CO <sub>2</sub> Case			
	Discount rate and statistics (million 2021\$)			
	5%	3%	2.5%	3%
	Average	Average	Average	95th percentile
<b>Liquid-immersed Distribution Transformers</b>				
1 .....	603.2	2,773.2	4,425.4	8,386.0
2 .....	946.1	4,350.2	6,941.9	13,154.7
3 .....	1,394.3	6,410.7	10,229.9	19,385.3
4 .....	1,517.6	6,977.6	11,134.6	21,099.8
5 .....	1,597.1	7,343.2	11,718.0	22,205.4
<b>Low-voltage Dry Type Distribution Transformers</b>				
1 .....	72.9	333.0	530.3	1,007.4
2 .....	106.1	484.8	772.1	1,466.7
3 .....	168.6	770.4	1,227.0	2,330.8
4 .....	450.3	2,056.9	3,276.0	6,223.1
5 .....	487.9	2,228.8	3,549.8	6,743.2
<b>Medium-voltage Distribution Transformers</b>				
1 .....	15.9	72.7	115.8	220.0
2 .....	23.3	106.7	169.9	322.7
3 .....	79.8	364.4	580.4	1,102.5
4 .....	103.7	473.6	754.2	1,432.7
5 .....	124.0	566.7	902.5	1,714.4

As discussed in section IV.L.2, DOE estimated the climate benefits likely to result from the reduced emissions of methane and N<sub>2</sub>O that DOE estimated for each of the considered TSLs for

distribution transformers. Table V.65 presents the value of the CH<sub>4</sub> emissions reduction at each TSL, and Table V.66 presents the value of the N<sub>2</sub>O emissions reduction at each TSL. The time-series

of annual values is presented for the proposed TSL in chapter 14 of the NOPR TSD.

TABLE V.65—PRESENT VALUE OF METHANE EMISSIONS REDUCTION FOR DISTRIBUTION TRANSFORMERS SHIPPED IN 2027–2056

TSL	SC-CH <sub>4</sub> Case			
	Discount rate and statistics (million 2021\$)			
	5%	3%	2.5%	3%
	Average	Average	Average	95th percentile
<b>Liquid-immersed Distribution Transformers</b>				
1 .....	202.8	659.9	939.6	1,748.1
2 .....	318.1	1,035.0	1,473.7	2,741.9
3 .....	469.0	1,526.2	2,173.0	4,042.9
4 .....	510.8	1,662.2	2,366.7	4,403.2
5 .....	538.6	1,752.5	2,495.3	4,642.6
<b>Low-voltage Dry Type Distribution Transformers</b>				
1 .....	24.8	80.1	113.9	212.2
2 .....	36.2	116.7	165.8	309.0
3 .....	57.5	185.5	263.6	491.3
4 .....	153.4	494.9	703.4	1,310.8
5 .....	166.2	536.3	762.2	1,420.4
<b>Medium-voltage Distribution Transformers</b>				
1 .....	5.4	17.6	25.0	46.6
2 .....	8.0	25.8	36.7	68.3
3 .....	27.3	88.0	125.1	233.2
4 .....	35.5	114.5	162.7	303.1
5 .....	42.4	137.0	194.7	362.8

TABLE V.66—PRESENT VALUE OF NITROUS OXIDE EMISSIONS REDUCTION FOR DISTRIBUTION TRANSFORMERS SHIPPED IN 2027–2056

TSL	SC-N <sub>2</sub> O Case			
	Discount rate and statistics (million 2021\$)			
	5%	3%	2.5%	3%
	Average	Average	Average	95th percentile
<b>Liquid-immersed Distribution Transformers</b>				
1 .....	2.1	9.2	14.5	24.5
2 .....	3.4	14.4	22.7	38.5
3 .....	4.9	21.2	33.5	56.7
4 .....	5.4	23.1	36.5	61.7
5 .....	5.7	24.3	38.4	64.9
<b>Low-voltage Dry Type Distribution Transformers</b>				
1 .....	0.3	1.1	1.7	2.9
2 .....	0.4	1.6	2.5	4.2
3 .....	0.6	2.5	4.0	6.8
4 .....	1.6	6.8	10.6	18.0
5 .....	1.7	7.3	11.5	19.5
<b>Medium-voltage Distribution Transformers</b>				
1 .....	0.1	0.2	0.4	0.6
2 .....	0.1	0.4	0.6	0.9
3 .....	0.3	1.2	1.9	3.2
4 .....	0.4	1.6	2.4	4.2

TABLE V.66—PRESENT VALUE OF NITROUS OXIDE EMISSIONS REDUCTION FOR DISTRIBUTION TRANSFORMERS SHIPPED IN 2027–2056—Continued

TSL	SC–N <sub>2</sub> O Case			
	Discount rate and statistics (million 2021\$)			
	5%	3%	2.5%	3%
	Average	Average	Average	95th percentile
5	0.4	1.9	2.9	5.0

DOE is well aware that scientific and economic knowledge about the contribution of CO<sub>2</sub> and other GHG emissions to changes in the future global climate and the potential resulting damages to the global and U.S. economy continues to evolve rapidly. Thus, any value placed on reduced GHG emissions in this proposed rulemaking is subject to change. That said, because of omitted damages, DOE agrees with the IWG that these estimates most likely underestimate the climate benefits of greenhouse gas reductions. DOE, together with other Federal agencies, will continue to review methodologies

for estimating the monetary value of reductions in CO<sub>2</sub> and other GHG emissions. This ongoing review will consider the comments on this subject that are part of the public record for this and other rulemakings, as well as other methodological assumptions and issues. DOE notes that the proposed standards would be economically justified even without inclusion of monetized benefits of reduced GHG emissions.

DOE also estimated the monetary value of the health benefits associated with NO<sub>x</sub> and SO<sub>2</sub> emissions reductions anticipated to result from the considered TSLs for distribution

transformers. The dollar-per-ton values that DOE used are discussed in section IV.L of this document. Table V.67 presents the present value for NO<sub>x</sub> emissions reduction for each TSL calculated using 7-percent and 3-percent discount rates, and Table V.68 presents similar results for SO<sub>2</sub> emissions reductions. The results in these tables reflect application of EPA's low dollar-per-ton values, which DOE used to be conservative. The time-series of annual values is presented for the proposed TSL in chapter 14 of the NOPR TSD.

TABLE V.67—PRESENT VALUE OF NO<sub>x</sub> EMISSIONS REDUCTION FOR DISTRIBUTION TRANSFORMERS SHIPPED IN 2027–2056

TSL	3% Discount rate	7% Discount rate
	Million 2021\$	Million 2021\$
<b>Liquid-Immersed Distribution Transformers</b>		
1	1,385.3	4,631.4
2	2,172.9	7,264.6
3	3,203.1	10,709.0
4	3,487.6	11,660.1
5	3,674.0	12,283.6
<b>Low-voltage Dry-Type Distribution Transformers</b>		
1	171.4	552.0
2	249.5	803.7
3	396.6	1,277.5
4	1,058.5	3,409.6
5	1,147.0	3,694.6
<b>Medium-voltage Dry-Type Distribution Transformers</b>		
1	37.5	120.8
2	55.0	177.3
3	187.9	605.4
4	244.3	786.9
5	292.4	941.7

TABLE V.68—PRESENT VALUE OF SO<sub>2</sub> EMISSIONS REDUCTION DISTRIBUTION TRANSFORMERS SHIPPED IN 2027–2056

TSL	3% Discount rate	7% Discount rate
	Million 2021\$	Million 2021\$
<b>Liquid-immersed Distribution Transformers</b>		
1	477.8	1,556.7
2	749.5	2,442.2



TABLE V.68—PRESENT VALUE OF SO<sub>2</sub> EMISSIONS REDUCTION DISTRIBUTION TRANSFORMERS SHIPPED IN 2027–2056—Continued

TSL	3% Discount rate	7% Discount rate
	Million 2021\$	Million 2021\$
3	1,104.1	3,597.5
4	1,201.2	3,913.9
5	1,262.4	4,113.2
<b>Low-voltage Dry-Type Distribution Transformers</b>		
1	57.8	181.3
2	84.2	263.9
3	133.8	419.3
4	357.3	1,119.8
5	387.1	1,213.4
<b>Medium-voltage Dry-Type Distribution Transformers</b>		
1	12.6	39.5
2	18.5	57.9
3	63.2	198.1
4	82.1	257.4
5	98.3	307.9

7. Other Factors

The Secretary of Energy, in determining whether a standard is economically justified, may consider any other factors that the Secretary deems to be relevant. (42 U.S.C. 6295(o)(2)(B)(i)(VII)) No other factors were considered in this analysis.

8. Summary of Economic Impacts

Table V.69 presents the NPV values that result from adding the estimates of the potential economic benefits resulting from reduced GHG and NO<sub>x</sub> and SO<sub>2</sub> emissions to the NPV of consumer benefits calculated for each TSL considered in this rulemaking. The consumer benefits are domestic U.S. monetary savings that occur as a result of purchasing the covered distribution

transformers, and are measured for the lifetime of products shipped in 2027–2056. The benefits associated with reduced GHG emissions resulting from the adopted standards are global benefits, and are also calculated based on the lifetime of distribution transformers shipped in 2027–2056. While many of the benefits from this proposed standard extend through 2115, the monetized benefits from GHG reductions are capped at end of 2070.

TABLE V.69—CONSUMER NPV COMBINED WITH PRESENT VALUE OF CLIMATE AND HEALTH BENEFITS

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5
<b>Liquid-immersed Distribution Transformers</b>					
<i>3% discount rate for Consumer NPV and Health Benefits (billion 2021\$)</i>					
5% Average SC–GHG case	10.0	15.1	21.7	22.9	12.3
3% Average SC–GHG case	12.6	19.3	27.8	29.5	19.3
2.5% Average SC–GHG case	14.5	22.3	32.2	34.4	24.4
3% 95th percentile SC–GHG case	19.3	29.8	43.3	46.4	37.1
<i>7% discount rate for Consumer NPV and Health Benefits (billion 2021\$)</i>					
5% Average SC–GHG case	3.4	5.2	7.1	7.0	0.0
3% Average SC–GHG case	6.1	9.3	13.2	13.6	6.9
2.5% Average SC–GHG case	8.0	12.4	17.6	18.5	12.1
3% 95th percentile SC–GHG case	12.8	19.9	28.7	30.5	24.7
<b>Low-voltage Distribution Transformers</b>					
<i>3% discount rate for Consumer NPV and Health Benefits (billion 2021\$)</i>					
5% Average SC–GHG case	2.3	3.3	3.8	14.9	15.2
3% Average SC–GHG case	2.6	3.8	4.5	16.8	17.3
2.5% Average SC–GHG case	2.9	4.1	5.1	18.2	18.9
3% 95th percentile SC–GHG case	3.4	5.0	6.4	21.8	22.7
<i>7% discount rate for Consumer NPV and Health Benefits (billion 2021\$)</i>					
5% Average SC–GHG case	0.9	1.2	1.1	4.8	4.8
3% Average SC–GHG case	1.2	1.7	1.9	6.8	6.9

TABLE V.69—CONSUMER NPV COMBINED WITH PRESENT VALUE OF CLIMATE AND HEALTH BENEFITS—Continued

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5
2.5% Average SC–GHG case .....	1.4	2.0	2.4	8.2	8.5
3% 95th percentile SC–GHG case .....	2.0	2.9	3.7	11.8	12.3
<b>Medium-voltage Distribution Transformers</b>					
<i>3% discount rate for Consumer NPV and Health Benefits (billion 2021\$)</i>					
5% Average SC–GHG case .....	0.4	0.5	2.2	2.5	2.4
3% Average SC–GHG case .....	0.5	0.6	2.5	2.9	2.9
2.5% Average SC–GHG case .....	0.6	0.7	2.8	3.3	3.3
3% 95th percentile SC–GHG case .....	0.7	0.8	3.4	4.1	4.3
<i>7% discount rate for Consumer NPV and Health Benefits (billion 2021\$)</i>					
5% Average SC–GHG case .....	0.2	0.1	0.6	0.7	0.6
3% Average SC–GHG case .....	0.2	0.2	1.0	1.1	1.1
2.5% Average SC–GHG case .....	0.3	0.3	1.2	1.5	1.5
3% 95th percentile SC–GHG case .....	0.4	0.5	1.9	2.3	2.5

C. Conclusion

When considering new or amended energy conservation standards, the standards that DOE adopts for any type (or class) of covered equipment must be designed to achieve the maximum improvement in energy efficiency that the Secretary determines is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A)) In determining whether a standard is economically justified, the Secretary must determine whether the benefits of the standard exceed its burdens by, to the greatest extent practicable, considering the seven statutory factors discussed previously. (42 U.S.C. 6295(o)(2)(B)(i)) The new or amended standard must also result in significant conservation of energy. (42 U.S.C. 6295(o)(3)(B))

For this NOPR, DOE considered the impacts of amended standards for each type of distribution transformer at each TSL, beginning with the maximum technologically feasible level, to determine whether that level was economically justified. Where the max-tech level was not justified, DOE then considered the next most efficient level and undertook the same evaluation until it reached the highest efficiency level that is both technologically feasible and economically justified and saves a significant amount of energy.

To aid the reader as DOE discusses the benefits and/or burdens for each type of equipment for each TSL, tables

in this section present a summary of the results of DOE’s quantitative analysis for each TSL. In addition to the quantitative results presented in the tables, DOE also considers other burdens and benefits that affect economic justification. These include the impacts on identifiable subgroups of consumers who may be disproportionately affected by a national standard and impacts on employment.

DOE also notes that the economics literature provides a wide-ranging discussion of how consumers trade off upfront costs and energy savings in the absence of government intervention. Much of this literature attempts to explain why consumers appear to undervalue energy efficiency improvements. There is evidence that consumers undervalue future energy savings as a result of (1) entrenched purchasing practices, (2) a lack of sufficient salience of the long-term or aggregate benefits, (3) a lack of sufficient savings to warrant delaying or altering purchases, (4) excessive focus on the short term, in the form of inconsistent weighting of future energy cost savings relative to available returns on other investments, (5) computational or other difficulties associated with the evaluation of relevant tradeoffs, and (6) a divergence in incentives. For example, in the case of dry-type distribution transformers the purchaser is often not the operator of the equipment. Instead, they are often installed at the time of building construction and operated by tenants. In other circumstances where

the owner is the operator, distribution transformers are often purchased based on lowest first cost (see section IV.F.3) rather than equipment efficiency. Having less than perfect foresight and a high degree of uncertainty about the future, consumers may trade off these types of investments at a higher than expected rate between current consumption and uncertain future energy cost savings.

1. Benefits and Burdens of TSLs Considered for Liquid-Immersed Distribution Transformers Standards

Table V.70 and Table V.71 summarize the quantitative impacts estimated for each TSL for liquid-immersed distribution transformers. The national impacts are measured over the lifetime of distribution transformers purchased in the 30-year period that begins in the anticipated year of compliance with amended standards (2027–2056). The energy savings, emissions reductions, and value of emissions reductions refer to full-fuel-cycle results. The efficiency levels contained in each TSL are described in section V.A of this document. Table V.71 shows the consumer impacts as equipment classes, which are the shipment weighted average results of each equipment class’s representative units. The consumer results for each representative unit and information on the fraction of shipments they represent are shown in section B.1.

TABLE V.70—SUMMARY OF ANALYTICAL RESULTS FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS TSLs: NATIONAL IMPACTS

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5
<b>Cumulative FFC National Energy Savings</b>					
Quads .....	3.22	5.06	7.43	<b>8.02</b>	8.45
<b>Cumulative FFC Emissions Reduction</b>					
CO <sub>2</sub> (million metric tons) .....	101.85	159.77	235.44	<b>256.27</b>	269.69
CH <sub>4</sub> (thousand tons) .....	733.07	1149.83	1695.46	<b>1846.56</b>	1946.92
N <sub>2</sub> O (thousand tons) .....	0.92	1.45	2.14	<b>2.32</b>	2.44
NO <sub>x</sub> (thousand tons) .....	160.27	251.40	370.62	<b>403.57</b>	425.24
SO <sub>2</sub> (thousand tons) .....	39.65	62.21	91.65	<b>99.71</b>	104.82
Hg (tons) .....	0.26	0.41	0.60	<b>0.65</b>	0.68
<b>Present Value of Benefits and Costs (3% discount rate, billion 2021\$)</b>					
Consumer Operating Cost Savings .....	4.06	6.08	10.17	<b>12.77</b>	18.51
Climate Benefits * .....	3.44	5.40	7.96	<b>8.66</b>	9.12
Health Benefits ** .....	6.19	9.71	14.31	<b>15.57</b>	16.40
Total Benefits † .....	13.70	21.19	32.43	<b>37.01</b>	44.03
Consumer Incremental Product Costs ‡ .....	1.09	1.93	4.67	<b>7.48</b>	24.76
Consumer Net Benefits .....	2.98	4.15	5.50	<b>5.30</b>	-6.25
Total Net Benefits .....	12.61	19.26	27.76	<b>29.53</b>	19.27
<b>Present Value of Benefits and Costs (7% discount rate, billion 2021\$)</b>					
Consumer Operating Cost Savings .....	1.36	2.04	3.40	<b>4.28</b>	6.20
Climate Benefits * .....	3.44	5.40	7.96	<b>8.66</b>	9.12
Health Benefits ** .....	1.86	2.92	4.31	<b>4.69</b>	4.94
Total Benefits † .....	6.67	10.36	15.67	<b>17.63</b>	20.26
Consumer Incremental Product Costs ‡ .....	0.58	1.04	2.51	<b>4.02</b>	13.31
Consumer Net Benefits .....	0.78	1.00	0.89	<b>0.26</b>	-7.11
Total Net Benefits .....	6.08	9.32	13.16	<b>13.61</b>	6.95

This table presents the costs and benefits associated with distribution transformers shipped in 2027–2056. These results include benefits to consumers which accrue after 2056 from the equipment shipped in 2027–2056.

\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC–CO<sub>2</sub>), methane (SC–CH<sub>4</sub>), and nitrous oxide (SC–N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC–GHG). For presentational purposes of this table, the climate benefits associated with the average SC–GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC–GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this rule, DOE has reverted to its approach prior to the injunction and present monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. The benefits are based on the low estimates of the monetized value. DOE is currently only monetizing (for SO<sub>2</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. See section IV.L of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. Total benefits for both the 3-percent and 7-percent cases are presented using the average SC–GHG with 3-percent discount rate, but the Department does not have a single central SC–GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates. See Table V.69 for net benefits using all four SC–GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

TABLE V.71—SUMMARY OF ANALYTICAL RESULTS FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS TSLs: MANUFACTURER AND CONSUMER IMPACTS

Category	TSL 1*	TSL 2*	TSL 3*	TSL 4*	TSL 5*
<b>Manufacturer Impacts</b>					
Industry NPV (million 2021\$) (No-new-standards case INPV = \$1,384 million) .....	1,283 to 1,297	1,242 to 1,268	1,166 to 1,232	<b>1,133 to 1,233</b>	1,004 to 1,347
Industry NPV (% change) .....	(7.3) to (6.3)	(10.3) to (8.4)	(15.8) to (11.0)	<b>(18.1) to (10.9)</b>	(27.5) to (2.7)
<b>Consumer Average LCC Savings (2021\$)</b>					
Equipment Class 1* .....	105	135	147	<b>120</b>	(269)
Equipment Class 2* .....	321	658	887	<b>868</b>	(2,493)
Equipment Class 12* .....	n.a.	n.a.	n.a.	<b>n.a.</b>	(7,482)

TABLE V.71—SUMMARY OF ANALYTICAL RESULTS FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS TSLs: MANUFACTURER AND CONSUMER IMPACTS—Continued

Category	TSL 1*	TSL 2*	TSL 3*	TSL 4*	TSL 5*
Shipment-Weighted Average**	120	172	199	<b>172</b>	(425)
<b>Consumer Simple PBP (years)</b>					
Equipment Class 1	19.0	16.3	7.4	<b>11.4</b>	31.7
Equipment Class 2	20.8	18.7	12.1	<b>12.5</b>	24.6
Equipment Class 12	n.a.	n.a.	n.a.	<b>n.a.</b>	36.0
Shipment-Weighted Average**	19	16	8	<b>12</b>	31
<b>Percent of Consumers that Experience a Net Cost</b>					
Equipment Class 1	32	27	17	<b>18</b>	87
Equipment Class 2	39	54	26	<b>19</b>	64
Equipment Class 12	n.a.	n.a.	n.a.	<b>n.a.</b>	95
Shipment-Weighted Average**	28	21	21	<b>18</b>	70

Parentheses indicate negative (–) values. The entry “n.a.” means not applicable because there is no change in the standard at certain TSLs.

\*The equipment classes, shown here are the shipment weighted average results of each equipment class’s representative units. The consumer results for each representative unit and information on the fraction of shipments they represent are shown in section B.1.

\*\* Scaled across the representative capacities of each equipment class and weighted by shares of each equipment class in total projected shipments in 2022.

First, DOE considered TSL 5, which represents the max-tech efficiency levels. TSL 5 would save an estimated 8.45 quads of energy, an amount DOE considers significant. Under TSL 5, the NPV of consumer benefit would be \$–7.11 billion using a discount rate of 7 percent, and \$–6.25 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 5 are 269.69 Mt of CO<sub>2</sub>, 104.82 thousand tons of SO<sub>2</sub>, 425.24 thousand tons of NO<sub>x</sub>, 0.68 tons of Hg, 1946.92 thousand tons of CH<sub>4</sub>, and 2.44 thousand tons of N<sub>2</sub>O. The estimated monetary value of the climate benefits from reduced GHG emissions (associated with the average SC–GHG at a 3-percent discount rate) at TSL 5 is \$9.12 billion. The estimated monetary value of the health benefits from reduced SO<sub>2</sub> and NO<sub>x</sub> emissions at TSL 5 is \$4.94 billion using a 7-percent discount rate and \$16.40 billion using a 3-percent discount rate.

Using a 7-percent discount rate for consumer benefits and costs, health benefits from reduced SO<sub>2</sub> and NO<sub>x</sub> emissions, and the 3-percent discount rate case for climate benefits from reduced GHG emissions, the estimated total NPV at TSL 5 is \$6.95 billion. Using a 3-percent discount rate for all benefits and costs, the estimated total NPV at TSL 5 is \$19.27 billion.

At TSL 5, the average LCC impact ranges from \$–269 for equipment class 1 to \$–7,482 for equipment class 12. The median PBP ranges from 24.6 years for equipment class 2 to 36.0 for equipment class 12. The fraction of consumers experiencing a net LCC cost ranges from 64 percent for equipment class 2 to 95 percent for equipment class 12.

At TSL 5, the projected change in INPV ranges from a decrease of \$380.7 million to a decrease of \$37.2 million, which corresponds to a change in INPV of –27.5 percent and –2.7 percent, respectively. DOE estimates that industry must invest \$289.4 million to comply with standards set at TSL 5.

The Secretary tentatively concludes that at TSL 5 for liquid-immersed distribution transformers, the benefits of energy savings, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on many consumers as indicated by lengthy PBPs, the percentage of customers who would experience LCC increases, negative consumer NPV at both 3 and 7 percent discount rates, and the capital and engineering costs that would result in a reduction in INPV for manufacturers. At TSL 5, the LCC savings are negative for most liquid-immersed distribution transformers, indicating there is a substantial risk that a disproportionate number of consumers will incur increased costs; these costs are also reflected in simple payback period estimates that approach or exceed average lifetimes. NPVs are calculated for equipment shipped over the period of 2027 through 2056 (see section IV.H.3). Distribution transformers are durable equipment with a maximum lifetime estimated at 60 years (see section IV.F.8), accruing operating cost savings through 2115. When considered over this time period, the discounted value of the incremental equipment costs outweigh the discounted value of the operating costs savings. Incremental equipment costs are incurred in the first year of

equipment life, while operating cost savings occur throughout the equipment lifetime, with later years heavily discounted. Further, there is risk of greater reduction in INPV at max-tech if manufacturers maintain their operating profit in the presence of amended efficiency standards on account of having higher costs but similar profits. The benefits of max-tech efficiency levels for liquid-immersed distribution transformer do not outweigh the negative impacts to consumers and manufacturers. Consequently, the Secretary has tentatively concluded that TSL 5 is not economically justified.

Next, DOE considered TSL 4, which would save an estimated 8.02 quads of energy, an amount DOE considers significant. Under TSL 4, the NPV of consumer benefit would be \$0.26 billion using a discount rate of 7 percent, and \$5.30 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 4 are 256.27 Mt of CO<sub>2</sub>, 99.71 thousand tons of SO<sub>2</sub>, 403.57 thousand tons of NO<sub>x</sub>, 0.65 tons of Hg, 1,846.56 thousand tons of CH<sub>4</sub>, and 2.32 thousand tons of N<sub>2</sub>O. The estimated monetary value of the climate benefits from reduced GHG emissions (associated with the average SC–GHG at a 3-percent discount rate) at TSL 4 is \$8.66 billion. The estimated monetary value of the health benefits from reduced SO<sub>2</sub> and NO<sub>x</sub> emissions at TSL 4 is \$4.69 billion using a 7-percent discount rate and \$15.57 billion using a 3-percent discount rate.

Using a 7-percent discount rate for consumer benefits and costs, health benefits from reduced SO<sub>2</sub> and NO<sub>x</sub> emissions, and the 3-percent discount

rate case for climate benefits from reduced GHG emissions, the estimated total NPV at TSL 4 is \$13.61 billion. Using a 3-percent discount rate for all benefits and costs, the estimated total NPV at TSL 4 is \$29.53 billion.

At TSL 4, the average LCC impact ranges from \$120 for equipment class 1 to \$868 for equipment class 2. The mean PBP ranges from 11.4 years for equipment class 1 to 12.5 years for equipment class 2, well below the average lifetime of 32 years. The fraction of consumers experiencing a net LCC cost ranges is 18 percent for equipment classes 1 and 2.

At TSL 4, the projected change in INPV ranges from a decrease of \$251.3 million to a decrease of \$151.0 million, which corresponds to decreases of 18.1 percent and 10.9 percent, respectively. DOE estimates that industry must invest \$270.6 million to comply with standards set at TSL 4.

After considering the analysis and weighing the benefits and burdens, the Secretary has tentatively concluded that a standard set at TSL 4 for liquid-immersed distribution transformers would be economically justified. Notably, the benefits to consumers outweigh the cost to manufacturers. At this TSL, the average LCC savings are positive across all equipment classes. An estimated 18 percent of liquid-immersed distribution transformer consumers experience a net cost. The FFC national energy savings are significant and the NPV of consumer benefits is positive using both a 3-percent and 7-percent discount rate. At TSL 4, the NPV of consumer benefits, even measured at the more conservative discount rate of 7 percent is larger than the maximum estimated manufacturers' loss in INPV. The standard levels at TSL 4 are economically justified even without weighing the estimated monetary value of emissions reductions. When those emissions reductions are included—representing \$8.66 billion in climate benefits (associated with the average SC-GHG at a 3-percent discount rate), and \$15.57 billion (using a 3-percent discount rate) or \$4.69 billion (using a 7-percent discount rate) in health benefits—the rationale becomes stronger still.

The energy savings under TSL 4 are primarily achievable by using amorphous steel. Both global and domestic capacity of amorphous steel is greater than it was during the consideration of the April 2013 Standards Final Rule and global capacity of amorphous steel (estimated to be approximately 150,000–250,000 metric tons) is approximately equal to the U.S. demand for electrical steel in

distribution transformer applications (estimated to be approximately 225,000 metric tons). Further, amorphous capacity grew in response to the April 2013 Standards Final Rule, although market demand did not necessarily grow in-kind. Further, amorphous steel manufacturers' response to the April 2013 Standards Final Rule demonstrates that amorphous capacity can be added quickly and would be added in response to an amended standard. Stakeholders have expressed willingness to increase supply to match any potential demand created by an amended efficiency standard. In the current market, increased capacity of amorphous steel is limited more by the demand for amorphous steel rather than any constraints on potential production capacity. Therefore, in the presence of an amended standard, it is expected that amorphous capacity would quickly rise to meet demand before the effective date of any amended energy conservation standards.

While there has historically been concern over the fact that there is only a single domestic supplier of amorphous steel, the GOES market is also served by a single domestic supplier. Stakeholders have noted that sufficient domestic supply of GOES is available only for M3 steel. Any efficiency standard that requires steel with lower no-load losses than M3 would not be able to be served entirely by a domestic source without further investment. The current market of electrical steel in distribution transformer applications is very much a global market at present.

Further, while some stakeholders have expressed concern as to whether amorphous supply would be sufficient to serve the entire market, stakeholders have also expressed supply concerns regarding GOES. Notably, stakeholders have identified increased competition for non-oriented electrical steel to serve the electric vehicle market. This competing demand is not expected to disappear in the near term and stakeholders have already seen supply challenges for many of the higher performing GOES grades. Amorphous steel has not been commercialized in electric motor applications and as such, does not experience the same competing demand for electric vehicle applications. The increased demand for non-oriented electrical steel also offers an alternative for current producers of GOES steel to transition their production to non-oriented electrical steel, meeting a needed market demand.

The consistent practice of distribution transformer customers to lightly-load their distribution transformers (see section IV.E.1.a), means that the

majority of energy savings are associated with reducing no-load losses. While higher grades of GOES may have slightly improved no-load loss characteristics, amorphous steel tends to reduce no-load losses by over 60 percent. Meaning, even if the best performing grades of GOES were available in unlimited quantities, amorphous steel would still lead to significant energy savings. Further, by nature of DOE evaluating efficiency of liquid-immersed distribution transformers at 50 percent load, even if loading increases such that in-service RMS average PUL is 50 percent, the distribution transformers produced under the amended efficiency standard would be more efficient than minimally efficient transformers on the market today.

The transition from GOES cores to amorphous cores does require some amount of investment on the part of the distribution transformer manufacturer if they produce their own cores. While these costs are not trivial, the benefit to consumers vastly outweighs the cost to manufacturers. Further, the increased practice of outsourcing distribution transformer core production means that there is little burden on small businesses, who overwhelmingly purchase prefabricated distribution transformer cores, rather than producing them in-house. As stated, DOE conducts the “walk-down” analysis to determine the TSL that represents the maximum improvement in energy efficiency that is technologically feasible and economically justified as required under EPCA. The walk-down is not a comparative analysis, as a comparative analysis would result in the maximization of net benefits instead of energy savings that are technologically feasible and economically justified, which would be contrary to the statute. 86 FR 70892, 70908.

Although DOE considered proposed amended standard levels for distribution transformers by grouping the efficiency levels for each equipment class into TSLs, DOE evaluates all analyzed efficiency levels in its analysis. The TSLs constructed by DOE to examine the impacts of amended energy efficiency standards for liquid-immersed distribution transformers align with the corresponding ELs defined in the engineering analysis. For the ELs above baseline that compose TSL 4 DOE finds that LCC savings are positive for all equipment classes, with simple paybacks well below the average equipment lifetimes. DOE also finds that the estimated fraction of consumers who would be negatively impacted from a

standard at TSL 4 to be 18 percent for all equipment classes.

For liquid-immersed distribution transformers (including single-phase and three-phase equipment) TSL 4 (*i.e.*, the proposed TSL) represents a 20 percent reduction in losses over the

current standard, with the exception of submersible liquid-immersed distribution transformers (equipment class 12) which remain at baseline.

Therefore, based on the previous considerations, DOE proposes to adopt the energy conservation standards for

liquid-immersed distribution transformers at TSL 4. The proposed amended energy conservation standards for distribution transformers, which are expressed as percentage efficiency at 50 percent PUL are shown in Table V.72.

TABLE V.72—PROPOSED AMENDED ENERGY CONSERVATION STANDARDS FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS

Electrical efficiency by kVA and Equipment class							
Equipment class 1		Equipment class 2		Equipment class 12			
Single-phase		Three-phase		Single-phase submersible		Three-phase submersible	
kVA		kVA		kVA		kVA	
10	98.96	15	98.92	10	98.70	15	98.65
15	99.05	30	99.06	15	98.82	30	98.83
25	99.16	45	99.13	25	98.95	45	98.92
37.5	99.24	75	99.22	37.5	99.05	75	99.03
50	99.29	112.5	99.29	50	99.11	112.5	99.11
75	99.35	150	99.33	75	99.19	150	99.16
100	99.40	225	99.38	100	99.25	225	99.23
167	99.46	300	99.42	167	99.33	300	99.27
250	99.51	500	99.48	250	99.39	500	99.35
333	99.54	750	99.52	333	99.43	750	99.40
500	99.59	1,000	99.54	500	99.49	1,000	99.43
667	99.62	1,500	99.58	667	99.52	1,500	99.48
833	99.64	2,000	99.61	833	99.55	2,000	99.51
		2,500	99.62			2,500	99.53
		3,750	99.66				
		5,000	99.68				

2. Benefits and Burdens of TSLs Considered for Low-Voltage Dry-Type Distribution Transformers Standards

Table V.73 and Table V.74 summarize the quantitative impacts estimated for each TSL for low-voltage dry-type distribution transformers. The national impacts are measured over the lifetime

of distribution transformers purchased in the 30-year period that begins in the anticipated year of compliance with amended standards (2027–2056). The energy savings, emissions reductions, and value of emissions reductions refer to full-fuel-cycle results. The efficiency levels contained in each TSL are described in section V.A of this

document. Table V.74 shows the consumer impacts as Equipment classes, which are the shipment weighted average results of each Equipment class’s representative units. The consumer results for each representative unit and information on the fraction of shipments they represent are shown in section B.1.

TABLE V.73—SUMMARY OF ANALYTICAL RESULTS FOR LOW-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS TSLs: NATIONAL IMPACTS

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5
<b>Cumulative FFC National Energy Savings</b>					
Quads	0.37	0.54	0.85	2.28	2.47
<b>Cumulative FFC Emissions Reduction</b>					
CO <sub>2</sub> (million metric tons)	11.59	16.87	26.81	71.58	77.57
CH <sub>4</sub> (thousand tons)	84.76	123.42	196.22	523.53	567.30
N <sub>2</sub> O (thousand tons)	0.10	0.15	0.24	0.64	0.70
NO <sub>x</sub> (thousand tons)	18.44	26.85	42.69	113.91	123.44
SO <sub>2</sub> (thousand tons)	4.45	6.48	10.30	27.51	29.81
Hg (tons)	0.03	0.04	0.07	0.18	0.19
<b>Present Value of Benefits and Costs (3% discount rate, billion 2021\$)</b>					
Consumer Operating Cost Savings	1.42	2.07	3.26	12.88	13.45
Climate Benefits *	0.41	0.60	0.96	2.56	2.77
Health Benefits **	0.73	1.07	1.70	4.53	4.91
Total Benefits †	2.57	3.74	5.92	19.97	21.13
Consumer Incremental Product Costs ‡	–0.06	–0.03	1.39	3.16	3.82
Consumer Net Benefits	1.48	2.11	1.87	9.72	9.63

TABLE V.73—SUMMARY OF ANALYTICAL RESULTS FOR LOW-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS TSLs: NATIONAL IMPACTS—Continued

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5
Total Net Benefits .....	2.63	3.78	4.52	16.81	17.31
<b>Present Value of Benefits and Costs (7% discount rate, billion 2021\$)</b>					
Consumer Operating Cost Savings .....	0.50	0.72	1.14	4.49	4.69
Climate Benefits * .....	0.41	0.60	0.96	2.56	2.77
Health Benefits ** .....	0.23	0.33	0.53	1.42	1.53
Total Benefits † .....	1.14	1.66	2.63	8.46	8.99
Consumer Incremental Product Costs ‡ .....	-0.03	-0.02	0.75	1.70	2.05
Consumer Net Benefits .....	0.53	0.74	0.39	2.79	2.63
Total Net Benefits .....	1.17	1.68	1.88	6.77	6.94

This table presents the costs and benefits associated with distribution transformers shipped in 2027–2056. These results include benefits to consumers which accrue after 2056 from the equipment shipped in 2027–2056.

\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC-CO2), methane (SC-CH4), and nitrous oxide (SC-N2O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC-GHG). For presentational purposes of this table, the climate benefits associated with the average SC-GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC-GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in Louisiana v. Biden, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this rule, DOE has reverted to its approach prior to the injunction and present monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NOx and SO2. The benefits are based on the low estimates of the monetized value. DOE is currently only monetizing (for SO2 and NOx) PM2.5 precursor health benefits and (for NOx) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM2.5 emissions. See section IV.L of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. Total benefits for both the 3-percent and 7-percent cases are presented using the average SC-GHG with 3-percent discount rate, but the Department does not have a single central SC-GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC-GHG estimates. See Table V.69 for net benefits using all four SC-GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

TABLE V.74—SUMMARY OF ANALYTICAL RESULTS FOR LOW-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS TSLs: MANUFACTURER AND CONSUMER IMPACTS

Category	TSL 1 *	TSL 2 *	TSL 3 *	TSL 4 *	TSL 5 *
<b>Manufacturer Impacts</b>					
Industry NPV (million 2021\$) (No-new-standards case INPV = \$194 million .....	189 (2.8)	188 to 189 (3.0) to (2.5)	167 to 177 (13.9) to (8.7)	145 to 168 (25.3) to (13.6)	<b>133 to 161 (31.4) to (17.2)</b>
<b>Consumer Average LCC Savings (2021\$)</b>					
Equipment Class 3 * .....	312	203	146	108	<b>147</b>
Equipment Class 4 * .....	357	381	214	624	<b>574</b>
Shipment-Weighted Average ** .....	311	315	179	492	<b>459</b>
<b>Consumer Simple PBP (years)</b>					
Equipment Class 3 * .....	0.0	3.3	7.6	11.7	<b>11.7</b>
Equipment Class 4 * .....	0.3	0.7	8.6	7.8	<b>9.1</b>
Shipment-Weighted Average ** .....	0.3	1.0	7.6	7.4	<b>8.4</b>
<b>Percent of Consumers that Experience a Net Cost</b>					
Equipment Class 3 * .....	1	17	33	43	<b>40</b>
Equipment Class 4 * .....	8	9	30	10	<b>16</b>
Shipment-Weighted Average ** .....	7	9	27	13	<b>17</b>

Parentheses indicate negative (–) values. The entry “n.a.” means not applicable because there is no change in the standard at certain TSLs.

\* The equipment classes, shown here are the shipment weighted average results of each equipment class’s representative units. The consumer results for each representative unit and information on the fraction of shipments they represent are shown in section B.1.

\*\* Scaled across the representative capacities of each equipment class and weighted by shares of each equipment class in total projected shipments in 2022

First, DOE considered TSL 5, which represents the max-tech efficiency levels. TSL 5 would save an estimated 2.47 quads of energy, an amount DOE considers significant. Under TSL 5, the NPV of consumer benefit would be \$2.63 billion using a discount rate of 7 percent, and \$9.63 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 5 are 77.57 Mt of CO<sub>2</sub>, 29.81 thousand tons of SO<sub>2</sub>, 123.44 thousand tons of NO<sub>x</sub>, 0.19 tons of Hg, 567.30 thousand tons of CH<sub>4</sub>, and 0.70 thousand tons of N<sub>2</sub>O. The estimated monetary value of the climate benefits from reduced GHG emissions (associated with the average SC-GHG at a 3-percent discount rate) at TSL 5 is \$2.77 billion. The estimated monetary value of the health benefits from reduced SO<sub>2</sub> and NO<sub>x</sub> emissions at TSL 5 is \$1.53 billion using a 7-percent discount rate and \$4.91 billion using a 3-percent discount rate.

Using a 7-percent discount rate for consumer benefits and costs, health benefits from reduced SO<sub>2</sub> and NO<sub>x</sub> emissions, and the 3-percent discount rate case for climate benefits from reduced GHG emissions, the estimated total NPV at TSL 5 is \$6.94 billion. Using a 3-percent discount rate for all benefits and costs, the estimated total NPV at TSL 5 is \$17.31 billion.

At TSL 5, the average LCC impact ranges from \$147 for equipment class 3 to \$574 for equipment class 4. The median PBP ranges from 9.1 years for equipment class 4 to 11.7 years for equipment class 3. The fraction of consumers experiencing a net LCC cost ranges from 16 percent for equipment class 4 to 40 percent for equipment class 3.

At TSL 5, the projected change in INPV ranges from a decrease of \$61.0 million to a decrease of \$33.5 million, which corresponds to decreases of 31.4 percent and 17.2 percent, respectively. DOE estimates that industry must invest \$69.4 million to comply with standards set at TSL 5.

After considering the analysis and weighing the benefits and burdens, the Secretary has tentatively concluded that at a standard set at TSL 5 for low-voltage dry-type distribution transformers would be economically justified. At this TSL, the average LCC savings are positive across all equipment classes. An estimated 16 percent of equipment class 4 to 40

percent of equipment class 3 low-voltage dry-type distribution transformer consumers experience a net cost. The FFC national energy savings are significant and the NPV of consumer benefits is positive using both a 3-percent and 7-percent discount rate. Notably, the benefits to consumers vastly outweigh the cost to manufacturers. At TSL 5, the NPV of consumer benefits, even measured at the more conservative discount rate of 7 percent is over 43.15 times higher than the maximum estimated manufacturers' loss in INPV. The standard levels at TSL 5 are economically justified even without weighing the estimated monetary value of emissions reductions. When those emissions reductions are included—representing \$2.77 billion in climate benefits (associated with the average SC-GHG at a 3-percent discount rate), and \$4.91 billion (using a 3-percent discount rate) or \$1.53 billion (using a 7-percent discount rate) in health benefits—the rationale becomes stronger still.

The energy savings under TSL 5 are primarily achievable by using amorphous steel. Both global and domestic capacity of amorphous steel is greater than it was during the consideration of the April 2013 Standards Final Rule and global capacity of amorphous (estimated to be approximately 150,000–250,000 metric tons) is approximately equal to the U.S. demand for electrical steel in distribution transformer applications (estimated to be approximately 225,000 metric tons). Further, amorphous capacity grew in response to the April 2013 Standards Final Rule, although market demand did not necessarily grow in-kind. As such, there is currently excess amorphous steel capacity. Amorphous manufacturers response to the April 2013 Standards Final Rule demonstrates that amorphous capacity can be added quickly and is limited more by the market demand for amorphous steel rather than the ability to build out new supply. Stakeholders have expressed willingness to increase supply to match any potential demand created by an amended efficiency standard. The majority of electrical steel use in distribution transformer applications is associated with liquid-immersed distribution transformer. Therefore, a proposed standard for liquid-immersed distribution transformers that requires amorphous

steel would result in amorphous capacity quickly rising to meet demand before the effective date of any amended energy conservation standards. The increased amorphous capacity would then be able to serve both the liquid-immersed and the low-voltage dry-type market.

As discussed in section V.C.1, the consistent practice of distribution transformer customers to lightly-load their distribution transformers, means that the majority of energy savings are associated with reducing no-load losses. While higher grades of GOES may have slightly improved no-load loss characteristics, amorphous steel tends to reduce no-load losses by over 60 percent. By nature of DOE evaluating efficiency of low-voltage dry-type distribution transformers at 35 percent load, even if loading increases such that in-service RMS average PUL is 35 percent, the distribution transformers produced under the amended efficiency standard would be more efficient than minimally efficient transformers on the market today.

As stated, DOE conducts the walk-down analysis to determine the TSL that represents the maximum improvement in energy efficiency that is technologically feasible and economically justified as required under EPCA.

Although DOE considered proposed amended standard levels for distribution transformers by grouping the efficiency levels (ELs) for each equipment class into TSLs, DOE evaluates all analyzed efficiency levels in its analysis. For low-voltage dry-type distribution transformers, TSL 5 (*i.e.*, the proposed TSL) maps directly to EL 5 for each equipment class and represents a 50 percent reduction in losses over the current standard for single-phase distribution transformers, and a 40 percent reduction in losses over the current standard for three-phase distribution transformers.

Therefore, based on the previous considerations, DOE proposes to adopt the energy conservation standards for low-voltage dry-type distribution transformers at TSL 5. The proposed amended energy conservation standards for low-voltage dry-type distribution transformers, which are expressed as percentage efficiency at 35 percent PUL are shown in Table V.75.



TABLE V.75—PROPOSED AMENDED ENERGY CONSERVATION STANDARDS FOR LOW-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS

Equipment class 3		Equipment class 4	
Single-phase		Three-phase	
kVA		kVA	
15 .....	98.84	15 .....	98.72
25 .....	98.99	30 .....	98.93
37.5 .....	99.09	45 .....	99.03
50 .....	99.14	75 .....	99.16
75 .....	99.24	112.5 .....	99.24
100 .....	99.30	150 .....	99.29
167 .....	99.35	225 .....	99.36
250 .....	99.40	300 .....	99.41
333 .....	99.45	500 .....	99.48
		750 .....	99.54
		1,000 .....	99.57

3. Benefits and Burdens of TSLs Considered for Medium-Voltage Dry-Type Distribution Transformers Standards

Table V.76 and Table V.77 summarize the quantitative impacts estimated for each TSL for medium-voltage dry-type distribution transformers. The national impacts are measured over the lifetime

of distribution transformers purchased in the 30-year period that begins in the anticipated year of compliance with amended standards (2027–2056). The energy savings, emissions reductions, and value of emissions reductions refer to full-fuel-cycle results. The efficiency levels contained in each TSL are described in section V.A of this

document. Table V.77 shows the consumer impacts as equipment classes, which are the shipment weighted average results of each equipment class’s representative units. The consumer results for each representative unit and information on the fraction of shipments they represent are shown in section B.1.

TABLE V.76—SUMMARY OF ANALYTICAL RESULTS FOR MEDIUM-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS TSLs: NATIONAL IMPACTS

Category	TSL 1	TSL 2	TSL 3	TSL 4	TSL 5
<b>Cumulative FFC National Energy Savings</b>					
Quads .....	0.08	<b>0.12</b>	0.40	0.53	0.63
<b>Cumulative FFC Emissions Reduction</b>					
CO <sub>2</sub> (million metric tons) .....	2.53	<b>3.71</b>	12.68	16.48	19.72
CH <sub>4</sub> (thousand tons) .....	18.59	<b>27.29</b>	93.13	121.07	144.90
N <sub>2</sub> O (thousand tons) .....	0.02	<b>0.03</b>	0.11	0.15	0.18
NO <sub>x</sub> (thousand tons) .....	4.04	<b>5.93</b>	20.24	26.31	31.49
SO <sub>2</sub> (thousand tons) .....	0.97	<b>1.43</b>	4.87	6.33	7.58
Hg (tons) .....	0.01	<b>0.01</b>	0.03	0.04	0.05
<b>Present Value of Benefits and Costs (3% discount rate, billion 2021\$)</b>					
Consumer Operating Cost Savings .....	0.28	<b>0.41</b>	2.12	2.50	2.72
Climate Benefits * .....	0.09	<b>0.13</b>	0.45	0.59	0.71
Health Benefits ** .....	0.16	<b>0.24</b>	0.80	1.04	1.25
Total Benefits † .....	0.53	<b>0.77</b>	3.38	4.13	4.67
Consumer Incremental Product Costs ‡ .....	0.02	<b>0.19</b>	0.87	1.19	1.76
Consumer Net Benefits .....	0.26	<b>0.21</b>	1.25	1.30	0.96
Total Net Benefits .....	0.51	<b>0.58</b>	2.50	2.94	2.92
<b>Present Value of Benefits and Costs (7% discount rate, billion 2021\$)</b>					
Consumer Operating Cost Savings .....	0.10	<b>0.14</b>	0.74	0.87	0.95
Climate Benefits * .....	0.09	<b>0.13</b>	0.45	0.59	0.71
Health Benefits ** .....	0.05	<b>0.07</b>	0.25	0.33	0.39
Total Benefits † .....	0.24	<b>0.35</b>	1.44	1.79	2.04
Consumer Incremental Product Costs ‡ .....	0.01	<b>0.10</b>	0.47	0.64	0.94
Consumer Net Benefits .....	0.09	<b>0.04</b>	0.27	0.23	0.00
Total Net Benefits .....	0.23	<b>0.24</b>	0.97	1.14	1.10

This table presents the costs and benefits associated with distribution transformers shipped in 2027–2056. These results include benefits to consumers which accrue after 2056 from the equipment shipped in 2027–2056.

\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC-CO<sub>2</sub>), methane (SC-CH<sub>4</sub>), and nitrous oxide (SC-N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC-GHG). For presentational purposes of this table, the climate benefits associated with the average SC-GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC-GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22-30087) granted the federal government's emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21-cv-1074-JDC-KK (W.D. La.). As a result of the Fifth Circuit's order, the preliminary injunction is no longer in effect, pending resolution of the federal government's appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from "adopting, employing, treating as binding, or relying upon" the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this rule, DOE has reverted to its approach prior to the injunction and present monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. The benefits are based on the low estimates of the monetized value. DOE is currently only monetizing (for SO<sub>2</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. See section IV.L of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. Total benefits for both the 3-percent and 7-percent cases are presented using the average SC-GHG with 3-percent discount rate, but the Department does not have a single central SC-GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC-GHG estimates. See Table V.69 for net benefits using all four SC-GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

TABLE V.77—SUMMARY OF ANALYTICAL RESULTS FOR MEDIUM-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS TSLs: MANUFACTURER AND CONSUMER IMPACTS

Category	TSL 1*	TSL 2*	TSL 3*	TSL 4*	TSL 5*
<b>Manufacturer Impacts</b>					
Industry NPV ( <i>million 2021\$</i> ) (No-new-standards case INPV = \$87 million .....	85	<b>85 to 86</b>	71 to 80	69 to 80	65 to 82
Industry NPV ( % change) .....	(2.1)	<b>(3.0) to (0.9)</b>	(18.7) to (8.8)	(21.4) to (7.8)	(25.9) to (5.9)
<b>Consumer Average LCC Savings (2021\$)</b>					
Equipment Class 6* .....	1,227	<b>833</b>	(165)	(985)	(1,557)
Equipment Class 8* .....	4,556	<b>3,016</b>	647	224	(3,727)
Equipment Class 10* .....	(1,209)	<b>(2,528)</b>	(5,704)	(5,569)	(9,558)
Shipment-Weighted Average** .....	1,594	<b>641</b>	(1,139)	(1,348)	(3,898)
<b>Consumer Simple PBP (years)</b>					
Equipment Class 6* .....	1.9	<b>4.5</b>	12.1	17.0	15.6
Equipment Class 8* .....	0.4	<b>1.9</b>	13.5	14.1	18.0
Equipment Class 10* .....	24.9	<b>24.9</b>	22.3	19.8	21.8
Shipment-Weighted Average** .....	7.9	<b>8.9</b>	14.1	13.7	16.3
<b>Percent of Consumers that Experience a Net Cost</b>					
Equipment Class 6* .....	7	<b>16</b>	48	68	59
Equipment Class 8* .....	3	<b>11</b>	48	51	77
Equipment Class 10* .....	83	<b>83</b>	77	82	92
Shipment-Weighted Average** .....	22	<b>26</b>	42	46	58

The entry "n.a." means not applicable because there is no change in the standard at certain TSLs.

\*The equipment classes, shown here are the shipment weighted average results of each equipment class's representative units. The consumer results for each representative unit and information on the fraction of shipments they represent are shown in section B.1.

\*\* Scaled across the representative capacities of each equipment class and weighted by shares of each equipment class in total projected shipments in 2022.

First, DOE considered TSL 5, which represents the max-tech efficiency levels. TSL 5 would save an estimated 0.63 quads of energy, an amount DOE considers significant. Under TSL 5, the NPV of consumer benefit would be \$3 million using a discount rate of 7 percent, and \$0.96 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 5 are 19.72 Mt of CO<sub>2</sub>, 7.58 thousand tons of SO<sub>2</sub>, 31.49 thousand tons of NO<sub>x</sub>, 0.05 tons of Hg, 144.90 thousand tons of CH<sub>4</sub>, and 0.18 thousand tons of N<sub>2</sub>O. The estimated monetary value of the climate benefits

from reduced GHG emissions (associated with the average SC-GHG at a 3-percent discount rate) at TSL 5 is \$0.71 billion. The estimated monetary value of the health benefits from reduced SO<sub>2</sub> and NO<sub>x</sub> emissions at TSL 5 is \$0.39 billion using a 7-percent discount rate and \$1.25 billion using a 3-percent discount rate.

Using a 7-percent discount rate for consumer benefits and costs, health benefits from reduced SO<sub>2</sub> and NO<sub>x</sub> emissions, and the 3-percent discount rate case for climate benefits from reduced GHG emissions, the estimated total NPV at TSL 5 is \$1.10 billion.

Using a 3-percent discount rate for all benefits and costs, the estimated total NPV at TSL 5 is \$2.92 billion.

At TSL 5, the average LCC impact ranges from \$ - 9,558 for equipment class 10 to \$ - 1557 for equipment class 6. The mean PBP ranges from 15.6 years for equipment class 6 to 21.8 years for equipment class 10. The fraction of consumers experiencing a net LCC cost ranges from 92 percent for equipment class 10 to 59 percent for equipment class 6.

At TSL 5, the projected change in INPV ranges from a decrease of \$22.6 million to a decrease of \$5.2 million,

which corresponds to decreases of 25.9 percent and 5.9 percent, respectively. DOE estimates that industry must invest \$21.2 million to comply with standards set at TSL 5.

The Secretary tentatively concludes that at TSL 5 for medium-voltage dry-type distribution transformers, the benefits of energy savings, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on many consumers as indicated by the negative LCCs for many equipment classes, the percentage of customers who would experience LCC increases, and the capital and engineering costs that could result in a reduction in INPV for manufacturers. At TSL 5 DOE is estimating negative benefits for a disproportionate fraction of consumers—a shipment weighted average of 58 percent. Further DOE estimates that there is a substantial risk to consumers, with a shipment weighted LCC savings for all MVDT equipment of  $-\$3,898$ . Consequently, the Secretary has tentatively concluded that TSL 5 is not economically justified.

Next, DOE considered TSL 4, which would save an estimated 0.53 quads of energy, an amount DOE considers significant. Under TSL 4, the NPV of consumer benefit would be \$0.23 billion using a discount rate of 7 percent, and \$1.30 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 4 are 16.48 Mt of CO<sub>2</sub>, 6.33 thousand tons of SO<sub>2</sub>, 26.31 thousand tons of NO<sub>x</sub>, 0.04 tons of Hg, 121.07 thousand tons of CH<sub>4</sub>, and 0.15 thousand tons of N<sub>2</sub>O. The estimated monetary value of the climate benefits from reduced GHG emissions (associated with the average SC-GHG at a 3-percent discount rate) at TSL 4 is \$0.59 billion. The estimated monetary value of the health benefits from reduced SO<sub>2</sub> and NO<sub>x</sub> emissions at TSL 4 is \$0.33 billion using a 7-percent discount rate and \$1.04 billion using a 3-percent discount rate.

Using a 7-percent discount rate for consumer benefits and costs, health benefits from reduced SO<sub>2</sub> and NO<sub>x</sub> emissions, and the 3-percent discount rate case for climate benefits from reduced GHG emissions, the estimated total NPV at TSL 4 is \$1.14 billion. Using a 3-percent discount rate for all benefits and costs, the estimated total NPV at TSL 4 is \$2.94 billion.

At TSL 4, the average LCC impact ranges from  $-\$5,569$  for equipment class 10 to \$224 for equipment class 8. The mean PBP ranges from 14.1 years for equipment class 8 to 19.8 years for equipment class 10. The fraction of

consumers experiencing a net LCC cost ranges from 51 percent for equipment class 8 to 82 percent for equipment class 10.

At TSL 4, the projected change in INPV ranges from a decrease of \$18.7 million to a decrease of \$6.8 million, which corresponds to decreases of 21.4 percent and 7.8 percent, respectively. DOE estimates that industry must invest \$19.2 million to comply with standards set at TSL 4.

The Secretary tentatively concludes that at TSL 4 for medium-voltage dry-type distribution transformers, the benefits of energy savings, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on many consumers as indicated by the negative LCCs for many equipment classes, the percentage of customers who would experience LCC increases, and the capital and engineering costs that could result in a reduction in INPV for manufacturers. At TSL 4 DOE is estimating negative benefits for a disproportionate fraction of consumers shipment weighted average of 53 percent. Further DOE estimates that there a substantial risk to consumers with a shipment weighted LCC savings for all MVDT equipment of  $-\$1,348$ . Consequently, the Secretary has tentatively concluded that TSL 4 is not economically justified.

Next, DOE considered TSL 3, which would save an estimated 0.40 quads of energy, an amount DOE considers significant. Under TSL 3, the NPV of consumer benefit would be \$0.27 billion using a discount rate of 7 percent, and \$1.25 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 3 are 12.68 Mt of CO<sub>2</sub>, 4.87 thousand tons of SO<sub>2</sub>, 20.24 thousand tons of NO<sub>x</sub>, 0.03 tons of Hg, 93.13 thousand tons of CH<sub>4</sub>, and 0.11 thousand tons of N<sub>2</sub>O. The estimated monetary value of the climate benefits from reduced GHG emissions (associated with the average SC-GHG at a 3-percent discount rate) at TSL 4 is \$0.45 billion. The estimated monetary value of the health benefits from reduced SO<sub>2</sub> and NO<sub>x</sub> emissions at TSL 3 is \$0.25 billion using a 7-percent discount rate and \$0.80 billion using a 3-percent discount rate.

Using a 7-percent discount rate for consumer benefits and costs, health benefits from reduced SO<sub>2</sub> and NO<sub>x</sub> emissions, and the 3-percent discount rate case for climate benefits from reduced GHG emissions, the estimated total NPV at TSL 3 is \$0.97 billion. Using a 3-percent discount rate for all

benefits and costs, the estimated total NPV at TSL 3 is \$2.50 billion.

At TSL 3, the average LCC impact ranges from  $-\$5,704$  for equipment class 10 to \$647 for equipment class 8. The mean PBP ranges from 12.1 years for equipment class 6 to 22.3 years for equipment class 10. The fraction of consumers experiencing a net LCC cost ranges from 77 percent for 10 to 48 percent for both equipment class 6 and 8.

At TSL 3, the projected change in INPV ranges from a decrease of \$16.3 million to a decrease of \$7.7 million, which corresponds to decreases of 18.7 percent and 8.8 percent, respectively. DOE estimates that industry must invest \$17.9 million to comply with standards set at TSL 3.

The Secretary tentatively concludes that at TSL 3 for medium-voltage dry-type distribution transformers, the benefits of energy savings, emission reductions, and the estimated monetary value of the emissions reductions would be outweighed by the economic burden on many consumers as indicated by the negative LCCs for many equipment classes, the percentage of customers who would experience LCC increases, and the capital and engineering costs that could result in a reduction in INPV for manufacturers. At TSL 3 DOE is estimating negative benefits for a disproportionate fraction of consumers shipment weighted average of 50 percent. Further DOE estimates that there a substantial risk to consumers with a shipment weighted LCC savings for all MVDT equipment of  $-\$1,139$ . Consequently, the Secretary has tentatively concluded that TSL 3 is not economically justified.

Next, DOE considered TSL 2, which would save an estimated 0.12 quads of energy, an amount DOE considers significant. Under TSL 2, the NPV of consumer benefit would be \$0.04 billion using a discount rate of 7 percent, and \$0.21 billion using a discount rate of 3 percent.

The cumulative emissions reductions at TSL 2 are 3.71 Mt of CO<sub>2</sub>, 1.43 thousand tons of SO<sub>2</sub>, 5.93 thousand tons of NO<sub>x</sub>, 0.01 tons of Hg, 27.29 thousand tons of CH<sub>4</sub>, and 0.03 thousand tons of N<sub>2</sub>O. The estimated monetary value of the climate benefits from reduced GHG emissions (associated with the average SC-GHG at a 3-percent discount rate) at TSL 4 is \$0.13 billion. The estimated monetary value of the health benefits from reduced SO<sub>2</sub> and NO<sub>x</sub> emissions at TSL 2 is \$0.07 billion using a 7-percent discount rate and \$0.24 billion using a 3-percent discount rate.

Using a 7-percent discount rate for consumer benefits and costs, health benefits from reduced SO<sub>2</sub> and NO<sub>x</sub> emissions, and the 3-percent discount rate case for climate benefits from reduced GHG emissions, the estimated total NPV at TSL 2 is \$0.24 billion. Using a 3-percent discount rate for all benefits and costs, the estimated total NPV at TSL 2 is \$0.58 billion.

At TSL 2, the average LCC impact ranges from -\$2,528 for equipment class 10 to \$3,016 for equipment class 8. The mean PBP ranges from 1.9 years for equipment class 8 to 24.9 years for equipment class 10, which is below the mean lifetime of 32 years. The fraction of consumers experiencing a net LCC cost ranges from 11 percent for equipment class 8 to 83 percent for equipment class 10.

At TSL 2, the projected change in INPV ranges from a decrease of \$2.7 million to a decrease of \$0.8 million, which corresponds to decreases of 3.0 percent and 0.9 percent, respectively. DOE estimates that industry must invest \$3.1 million to comply with standards set at TSL 2.

After considering the analysis and weighing the benefits and burdens, the Secretary has tentatively concluded that at a standard set at TSL 2 for medium-voltage distribution transformers would be economically justified. At this TSL, the average LCC savings are positive across all equipment classes except for equipment class 10, with a shipment weighted average LCC for all medium-voltage dry-type distribution transformers of \$641. An estimated 11 percent of equipment class 8 to 83 percent of equipment class 10 medium-voltage dry-type distribution transformer consumers experience a net cost, while the shipment weighted

average of consumers who experience a net cost is 26 percent. The FFC national energy savings are significant and the NPV of consumer benefits is positive using both a 3-percent and 7-percent discount rate. Notably, the benefits to consumers outweigh the cost to manufacturers. At TSL 2, the NPV of consumer benefits, even measured at the more conservative discount rate of 7 percent is over 38.3 times higher than the maximum estimated manufacturers' loss in INPV. The standard levels at TSL 2 are economically justified even without weighing the estimated monetary value of emissions reductions. When those emissions reductions are included—representing \$0.13 billion in climate benefits (associated with the average SC-GHG at a 3-percent discount rate), and \$0.24 billion (using a 3-percent discount rate) or \$0.07 billion (using a 7-percent discount rate) in health benefits—the rationale becomes stronger still.

As stated, DOE conducts the walk-down analysis to determine the TSL that represents the maximum improvement in energy efficiency that is technologically feasible and economically justified as required under EPCA.

Although DOE considered proposed amended standard levels for distribution by grouping the efficiency levels for each equipment class into TSLs, DOE evaluates all analyzed efficiency levels in its analysis. For medium-voltage dry-type distribution transformer the TSL 2 maps directly to EL 2 for all equipment classes. EL 2 represents a 10 percent reduction in losses over the current standard. While the consumer benefits for equipment class 10 are negative at EL 2 at -\$2,528, they are positive for all other equipment

representing 78 percent of all MVDT units shipped, additionally the consumer benefits at EL 2, excluding equipment class 10, increases from \$641 to \$1,271 in LCC savings. Further, the EL 2 represent an improvement in efficiency where the FFC national energy savings is maximized, with positive NPVs at both 3 and 7 percent, and the shipment weighted average consumer benefit at EL 2 is positive. The shipment weighted consumer benefits for TSL, and EL 2 are shown in Table V.77.

As discussed previously, at the max-tech efficiency levels (TSL 5), TSL 4, and TSL 3 for all medium-voltage dry-type distribution transformers there is a substantial risk to consumers due to negative LCC savings for most equipment, with a shipment weighted average consumer benefit of -\$3,898, -\$1,348, and -\$1,139, respectively, while at TSL 2 it is \$641. Therefore, DOE has tentatively concluded that the efficiency levels above TSL 2 are not justified. Additionally, at the examined efficiency levels greater than TSL 2 DOE is estimating that a disproportionate fraction of consumers would be negatively impacted by these efficiency levels. DOE estimates that shipment weighted fraction of negatively impacted consumers for TSL 3, TSL 4, and TSL 5 (max-tech) to be 42, 46, and 58 percent, respectively.

Therefore, based on the previous considerations, DOE proposes to adopt the energy conservation standards for medium-voltage dry-type distribution transformers at TSL 2. The proposed amended energy conservation standards for medium-voltage dry-type distribution transformers, which are expressed as percentage efficiency at 50 percent PUL are shown in Table V.78.

TABLE V.78—PROPOSED AMENDED ENERGY CONSERVATION STANDARDS FOR MEDIUM-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS

[Electrical efficiency by kVA and equipment class]

Equipment class	Single-phase			kVA	Three-phase		
	BIL				BIL		
	20–45 kV	46–95 kV	≥96 kV		20–45 kV	46–95 kV	≥96 kV
EC5	EC7	EC9	EC6	EC8	EC10		
15	98.29	98.07		15	97.74	97.45	
25	98.49	98.30		30	98.11	97.86	
37.5	98.64	98.47		45	98.29	98.07	
50	98.74	98.58		75	98.49	98.31	
75	98.86	98.71	98.68	112.5	98.67	98.52	
100	98.94	98.80	98.77	150	98.78	98.66	
167	99.06	98.95	98.92	225	98.94	98.82	98.71
250	99.16	99.05	99.02	300	99.04	98.93	98.82
333	99.23	99.13	99.09	500	99.18	99.09	99.00
500	99.30	99.21	99.18	750	99.29	99.21	99.12
667	99.34	99.26	99.23	1000	99.35	99.28	99.20
833	99.38	99.31	99.28	1500	99.43	99.37	99.29

TABLE V.78—PROPOSED AMENDED ENERGY CONSERVATION STANDARDS FOR MEDIUM-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMERS—Continued

[Electrical efficiency by kVA and equipment class]

Single-phase				Three-phase			
kVA	BIL			kVA	BIL		
	20–45 kV	46–95 kV	≥96 kV		20–45 kV	46–95 kV	≥96 kV
Equipment class	EC5	EC7	EC9		EC6	EC8	EC10
				2000 .....	99.49	99.42	99.35
				2500 .....	99.52	99.47	99.40
				3750 .....	99.58	99.53	99.47
				5000 .....	99.62	99.58	99.51

4. Annualized Benefits and Costs of the Proposed Standards for Liquid-Immersed Distribution Transformers

The benefits and costs of the proposed standards can also be expressed in terms of annualized values. The annualized net benefit is (1) the annualized national economic value (expressed in 2021\$) of the benefits from operating products that meet the proposed standards (consisting primarily of operating cost savings from using less energy, minus increases in product purchase costs, and (2) the annualized monetary value of the climate and health benefits from emission reductions.

Table V.79 shows the annualized values for the proposed standards for distribution transformers, expressed in 2021\$. The results under the primary estimate are as follows.

Using a 7-percent discount rate for consumer benefits and costs and NO<sub>x</sub> and SO<sub>2</sub> reduction benefits, and a 3-percent discount rate case for GHG social costs, the estimated cost of the proposed standards for distribution transformers is \$424.8 million per year in increased equipment costs, while the estimated annual benefits are \$451.9 million from reduced equipment operating costs, \$497.4 million from

GHG reductions, and \$495.3million from reduced NO<sub>x</sub> and SO<sub>2</sub> emissions. In this case, the net benefit amounts to \$1,019.8 million per year.

Using a 3-percent discount rate for all benefits and costs, the estimated cost of the proposed standards for distribution transformers is \$429.5 million per year in increased equipment costs, while the estimated annual benefits are \$7,33.5 million in reduced operating costs, \$497.4 million from GHG reductions, and \$894.3 million from reduced NO<sub>x</sub> and SO<sub>2</sub> emissions. In this case, the net benefit amounts to \$1,695.8 million per year.

TABLE V.79—ANNUALIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR LIQUID-IMMERSED DISTRIBUTION TRANSFORMERS (TSL 4)

Category	Million 2021\$/year		
	Primary estimate	Low-net-benefits estimate	High-net-benefits estimate
<b>3% discount rate</b>			
Consumer Operating Cost Savings .....	733.5	686.9	789.9
Climate Benefits * .....	497.4	478.9	519.5
Health Benefits ** .....	894.3	860.5	934.8
Total Benefits † .....	2,125.3	2,026.3	2,244.2
Consumer Incremental Equipment Costs ‡ .....	429.5	449.0	413.2
Net Benefits .....	1,695.8	1,577.3	1,831.0
<b>7% discount rate</b>			
Consumer Operating Cost Savings .....	451.9	425.7	482.2
Climate Benefits * (3% discount rate) .....	497.4	478.9	519.5
Health Benefits ** .....	495.3	477.9	515.3
Total Benefits † .....	1,444.7	1,382.5	1,517.0
Consumer Incremental Equipment Costs ‡ .....	424.8	442.1	409.9
Net Benefits .....	1,019.8	940.5	1,107.2

This table presents the annualized costs and benefits associated with liquid-immersed distribution transformers equipment shipped in 2027–2056. These results include benefits to consumers which accrue after 2055 from the products purchased in 2027–2056.

\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC-CO<sub>2</sub>), methane (SC-CH<sub>4</sub>), and nitrous oxide (SC-N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC-GHG). For presentational purposes of this table, the climate benefits associated with the average SC-GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC-GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22-30087) granted the federal government's emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21-cv-1074-JDC-KK (W.D. La.). As a result of the Fifth Circuit's order, the preliminary injunction is no longer in effect, pending resolution of the federal government's appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from "adopting, employing, treating as binding, or relying upon" the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this rule, DOE has reverted to its approach prior to the injunction and present monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. DOE is currently only monetizing PM<sub>2.5</sub> and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. The health benefits are presented at real discount rates of 3 and 7 percent. See section IV.L.2 of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC-GHG with 3-percent discount rate, but the Department does not have a single central SC-GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC-GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

5. Annualized Benefits and Costs of the Proposed Standards for Low-Voltage Distribution Transformers

The benefits and costs of the proposed standards can also be expressed in terms of annualized values. The annualized net benefit is (1) the annualized national economic value (expressed in 2021\$) of the benefits from operating products that meet the proposed standards (consisting primarily of operating cost savings from using less energy, minus increases in product purchase costs, and (2) the annualized monetary value of the climate and health benefits from emission reductions.

Table V.80 shows the annualized values for the proposed standards for distribution transformers, expressed in 2021\$. The results under the primary estimate are as follows.

Using a 7-percent discount rate for consumer benefits and costs and NO<sub>x</sub> and SO<sub>2</sub> reduction benefits, and a 3-percent discount rate case for GHG social costs, the estimated cost of the proposed standards for distribution transformers is \$216.9 million per year in increased equipment costs, while the estimated annual benefits are \$495.0 million from reduced equipment operating costs, \$159.2 million from

GHG reductions, and \$162.1 million from reduced NO<sub>x</sub> and SO<sub>2</sub> emissions. In this case, the net benefit amounts to \$599.4 million per year.

Using a 3-percent discount rate for all benefits and costs, the estimated cost of the proposed standards for distribution transformers is \$219.3 million per year in increased equipment costs, while the estimated annual benefits are \$772.1 million in reduced operating costs, \$159.2 million from GHG reductions, and \$281.8 million from reduced NO<sub>x</sub> and SO<sub>2</sub> emissions. In this case, the net benefit amounts to \$993.8 million per year.

TABLE V.80—ANNUALIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR LOW-VOLTAGE DISTRIBUTION TRANSFORMERS (TSL 5)

Category	Million 2021\$/year		
	Primary estimate	Low-net-benefits estimate	High-net-benefits estimate
<b>3% discount rate</b>			
Consumer Operating Cost Savings .....	772.1	716.9	831.3
Climate Benefits * .....	159.2	151.6	165.9
Health Benefits ** .....	281.8	268.3	293.9
Total Benefits † .....	1,213.1	1,136.7	1,291.1
Consumer Incremental Product Costs ‡ .....	219.3	228.7	208.7
Net Benefits .....	993.8	908.0	1,082.4
<b>7% discount rate</b>			
Consumer Operating Cost Savings .....	495.0	462.8	528.7
Climate Benefits * (3% discount rate) .....	159.2	151.6	165.9
Health Benefits ** .....	162.1	154.9	168.2
Total Benefits † .....	816.3	769.3	862.8
Consumer Incremental Product Costs ‡ .....	216.9	225.2	207.3
Net Benefits .....	599.4	544.1	655.5

This table presents the annualized costs and benefits associated with low-voltage dry-type distribution transformers equipment shipped in 2027–2056. These results include benefits to consumers which accrue after 2055 from the products purchased in 2027–2056.

\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC-CO<sub>2</sub>), methane (SC-CH<sub>4</sub>), and nitrous oxide (SC-N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC-GHG). For presentational purposes of this table, the climate benefits associated with the average SC-GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC-GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22-30087) granted the federal government's emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21-cv-1074-JDC-KK (W.D. La.). As a result of the Fifth Circuit's order, the preliminary injunction is no longer in effect, pending resolution of the federal government's appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from "adopting, employing, treating as binding, or relying upon" the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this rule, DOE has reverted to its approach prior to the injunction and present monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. DOE is currently only monetizing PM<sub>2.5</sub> and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. The health benefits are presented at real discount rates of 3 and 7 percent. See section IV.L.2 of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC-GHG with 3-percent discount rate, but the Department does not have a single central SC-GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC-GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

6. Annualized Benefits and Costs of the Proposed Standards for Medium-Voltage Distribution Transformers

The benefits and costs of the proposed standards can also be expressed in terms of annualized values. The annualized net benefit is (1) the annualized national economic value (expressed in 2021\$) of the benefits from operating products that meet the proposed standards (consisting primarily of operating cost savings from using less energy, minus increases in product purchase costs, and (2) the annualized monetary value of the climate and health benefits from emission reductions.

Table V.81 shows the annualized values for the proposed standards for distribution transformers, expressed in 2021\$. The results under the primary estimate are as follows.

Using a 7-percent discount rate for consumer benefits and costs and NO<sub>x</sub> and SO<sub>2</sub> reduction benefits, and a 3-percent discount rate case for GHG social costs, the estimated cost of the proposed standards for distribution transformers is \$10.8 million per year in increased equipment costs, while the estimated annual benefits are \$14.9 million from reduced equipment operating costs, \$7.6 million from GHG

reductions, and \$7.8 million from reduced NO<sub>x</sub> and SO<sub>2</sub> emissions. In this case, the net benefit amounts to \$19.5 million per year.

Using a 3-percent discount rate for all benefits and costs, the estimated cost of the proposed standards for distribution transformers is \$11.0 million per year in increased equipment costs, while the estimated annual benefits are \$23.3 million in reduced operating costs, \$7.6 million from GHG reductions, and \$13.5 million from reduced NO<sub>x</sub> and SO<sub>2</sub> emissions. In this case, the net benefit amounts to \$33.5 million per year.

TABLE V.81—ANNUALIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR MEDIUM-VOLTAGE DISTRIBUTION TRANSFORMERS (TSL 2)

Category	Million 2021\$/year		
	Primary estimate	Low-net-benefits estimate	High-net-benefits estimate
<b>3% discount rate</b>			
Consumer Operating Cost Savings .....	23.3	22.2	25.8
Climate Benefits * .....	7.6	7.5	8.2
Health Benefits ** .....	13.5	13.2	14.5
Total Benefits † .....	44.4	42.9	48.5
Consumer Incremental Product Costs ‡ .....	11.0	11.7	10.7
Net Benefits .....	33.5	31.1	37.7
<b>7% discount rate</b>			
Consumer Operating Cost Savings .....	14.9	14.3	16.4
Climate Benefits * (3% discount rate) .....	7.6	7.5	8.2
Health Benefits ** .....	7.8	7.6	8.3
Total Benefits † .....	30.3	29.4	32.9
Consumer Incremental Product Costs ‡ .....	10.8	11.6	10.6
Net Benefits .....	19.5	17.9	22.2

This table presents the annualized costs and benefits associated with medium-voltage dry-type distribution transformers equipment shipped in 2027 – 2056. These results include benefits to consumers which accrue after 2055 from the products purchased in 2027 – 2056.

Climate benefits are calculated using four different estimates of the social cost of carbon (SC-CO<sub>2</sub>), methane (SC-CH<sub>4</sub>), and nitrous oxide (SC-N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC-GHG). For presentational purposes of this table, the climate benefits associated with the average SC-GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC-GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22-30087) granted the federal government's emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21-cv-1074-JDC-KK (W.D. La.). As a result of the Fifth Circuit's order, the preliminary injunction is no longer in effect, pending resolution of the federal government's appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from "adopting, employing, treating as binding, or relying upon" the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. As reflected in this rule, DOE has reverted to its approach prior to the injunction and present monetized greenhouse gas abatement benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. DOE is currently only monetizing PM<sub>2.5</sub> and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. The health benefits are presented at real discount rates of 3 and 7 percent. See section IV.L.2 of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC-GHG with 3-percent discount rate, but the Department does not have a single central SC-GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC-GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

7. Benefits and Costs of the Proposed Standards for all Considered Distribution Transformers

As described in sections V.C.1 through V.C.6, for this NOPR DOE is

proposing TSL 4 for liquid-immersed, TSL 5 for low-voltage dry-type, and TSL 2 for medium-voltage dry-type distribution transformers. Table VI.1 shows the combined cumulative

benefits, and Table V.83 shows the combined annualized benefits for the proposed levels for all distribution transformers.

TABLE V.82—SUMMARY OF MONETIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR ALL DISTRIBUTION TRANSFORMERS AT PROPOSED STANDARD LEVELS

	Billion \$2021
<b>3% discount rate</b>	
Consumer Operating Cost Savings .....	26.63
Climate Benefits * .....	11.56
Health Benefits ** .....	20.72
Total Benefits † .....	58.91
Consumer Incremental Product Costs ‡ .....	11.49
Net Benefits .....	47.42
<b>7% discount rate</b>	
Consumer Operating Cost Savings .....	9.11
Climate Benefits * (3% discount rate) .....	11.56
Health Benefits ** .....	6.29
Total Benefits † .....	26.97
Consumer Incremental Product Costs ‡ .....	6.17
Net Benefits .....	20.79

This table presents the costs and benefits associated with distribution transformers shipped in 2027–2056. These results include benefits to consumers which accrue after 2056 from the products shipped in 2027–2056.

\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC-CO<sub>2</sub>), methane (SC-CH<sub>4</sub>), and nitrous oxide (SC-N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC-GHG). For presentational purposes of this table, the climate benefits associated with the average SC-GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC-GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22-30087) granted the Federal government's emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21-cv-1074-JDC-KK (W.D. La.). As a result of the Fifth Circuit's order, the preliminary injunction is no longer in effect, pending resolution of the Federal government's appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from "adopting, employing, treating as binding, or relying upon" the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. In the absence of further intervening court orders, DOE will revert to its approach prior to the injunction and present monetized benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. DOE is currently only monetizing (for SO<sub>2</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. The health benefits are presented at real discount rates of 3 and 7 percent. See section IV.L of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC-GHG with 3-percent discount rate, but the Department does not have a single central SC-GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC-GHG estimates. See Table V.69 for net benefits using all four SC-GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.



TABLE V.8384—ANNUALIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR ALL DISTRIBUTION TRANSFORMERS AT PROPOSED STANDARD LEVELS

Category	Million 2021\$/year		
	Primary estimate	Low-net-benefits estimate	High-net-benefits estimate
<b>3% discount rate</b>			
Consumer Operating Cost Savings .....	1,528.9	1,426.0	1,647.0
Climate Benefits* .....	664.2	638.0	693.6
Health Benefits** .....	1,189.6	1,142.0	1,243.2
Total Benefits † .....	3,382.8	3,205.9	3,583.8
Consumer Incremental Product Costs ‡ .....	659.8	689.4	632.6
Net Benefits .....	2,723.1	2,516.4	2,951.1
<b>7% discount rate</b>			
Consumer Operating Cost Savings .....	961.8	902.8	1,027.3
Climate Benefits* (3% discount rate) .....	664.2	638.0	693.6
Health Benefits** .....	665.2	640.4	691.8
Total Benefits † .....	2,291.3	2,181.2	2,412.7
Consumer Incremental Product Costs ‡ .....	652.5	678.9	627.8
Net Benefits .....	1,638.7	1,502.5	1,784.9

This table presents the costs and benefits associated with distribution transformers shipped in 2027–2056. These results include benefits to consumers which accrue after 2056 from the products shipped in 2027–2056.

\*Climate benefits are calculated using four different estimates of the social cost of carbon (SC–CO<sub>2</sub>), methane (SC–CH<sub>4</sub>), and nitrous oxide (SC–N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC–GHG). For presentational purposes of this table, the climate benefits associated with the average SC–GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC–GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the Federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the Federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. In the absence of further intervening court orders, DOE will revert to its approach prior to the injunction and present monetized benefits where appropriate and permissible under law.

\*\*Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. The benefits are based on the low estimates of the monetized value. DOE is currently only monetizing (for SO<sub>x</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. See section IV.L of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC–GHG with 3-percent discount rate, but the Department does not have a single central SC–GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates. See Table V.69 for net benefits using all four SC–GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

*D. Reporting, Certification, and Sampling Plan*

Manufacturers, including importers, must use product-specific certification templates to certify compliance to DOE. For distribution transformers, the certification template reflects the general certification requirements specified at 10 CFR 429.12 and the product-specific requirements specified at 10 CFR 429.47. As discussed in the previous paragraphs, DOE is not proposing to amend the product-specific certification requirements for this equipment.

**VI. Procedural Issues and Regulatory Review**

*A. Review Under Executive Orders 12866 and 13563*

Executive Order (“E.O.”)12866, “Regulatory Planning and Review,” as supplemented and reaffirmed by E.O.

13563, “Improving Regulation and Regulatory Review, 76 FR 3821 (Jan. 21, 2011), requires agencies, to the extent permitted by law, to (1) propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs (recognizing that some benefits and costs are difficult to quantify); (2) tailor regulations to impose the least burden on society, consistent with obtaining regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations; (3) select, in choosing among alternative regulatory approaches, those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity); (4) to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must

adopt; and (5) identify and assess available alternatives to direct regulation, including providing economic incentives to encourage the desired behavior, such as user fees or marketable permits, or providing information upon which choices can be made by the public. DOE emphasizes as well that E.O. 13563 requires agencies to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible. In its guidance, the Office of Information and Regulatory Affairs (“OIRA”) in the Office of Management and Budget (“OMB”) has emphasized that such techniques may include identifying changing future compliance costs that might result from technological innovation or anticipated behavioral changes. For the reasons stated in the preamble, this proposed/ final regulatory action is consistent with these principles.

Section 6(a) of E.O. 12866 also requires agencies to submit “significant regulatory actions” to OIRA for review. OIRA has determined that this proposed regulatory action constitutes an economically significant regulatory action under section 3(f) of E.O. 12866. Accordingly, pursuant to section 6(a)(3)(C) of E.O. 12866, DOE has provided to OIRA an assessment,

including the underlying analysis, of benefits and costs anticipated from the proposed regulatory action, together with, to the extent feasible, a quantification of those costs; and an assessment, including the underlying analysis, of costs and benefits of potentially effective and reasonably feasible alternatives to the planned regulation, and an explanation why the

planned regulatory action is preferable to the identified potential alternatives. These assessments are summarized in this preamble and further detail can be found in the technical support document for this rulemaking. A summary of the potential costs and benefits of the regulatory action is presented in Table VI.1 and Table VI.2.

TABLE VI.1—SUMMARY OF MONETIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR ALL DISTRIBUTION TRANSFORMERS AND PROPOSED STANDARD LEVELS

	Billion \$2021
<b>3% discount rate</b>	
Consumer Operating Cost Savings .....	26.63
Climate Benefits * .....	11.56
Health Benefits ** .....	20.72
Total Benefits † .....	58.91
Consumer Incremental Product Costs ‡ .....	11.49
Net Benefits .....	47.42
<b>7% discount rate</b>	
Consumer Operating Cost Savings .....	9.11
Climate Benefits * (3% discount rate) .....	11.56
Health Benefits ** .....	6.29
Total Benefits † .....	26.97
Consumer Incremental Product Costs ‡ .....	6.17
Net Benefits .....	20.79

This table presents the costs and benefits associated with distribution transformers shipped in 2027–2056. These results include benefits to consumers which accrue after 2056 from the products shipped in 2027–2056.

\* Climate benefits are calculated using four different estimates of the social cost of carbon (SC–CO<sub>2</sub>), methane (SC–CH<sub>4</sub>), and nitrous oxide (SC–N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC–GHG). For presentational purposes of this table, the climate benefits associated with the average SC–GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC–GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the Federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the Federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. In the absence of further intervening court orders, DOE will revert to its approach prior to the injunction and present monetized benefits where appropriate and permissible under law.

\*\* Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. DOE is currently only monetizing (for SO<sub>2</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. The health benefits are presented at real discount rates of 3 and 7 percent. See section IV.L of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC–GHG with 3-percent discount rate, but the Department does not have a single central SC–GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates. See Table V.69 for net benefits using all four SC–GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

TABLE VI.2—ANNUALIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR ALL DISTRIBUTION TRANSFORMERS AND PROPOSED STANDARD LEVELS

Category	Million 2021\$/year		
	Primary estimate	Low-net-benefits estimate	High-net-benefits estimate
<b>3% discount rate</b>			
Consumer Operating Cost Savings .....	1,528.9	1,426.0	1,647.0
Climate Benefits * .....	664.2	638.0	693.6
Health Benefits ** .....	1,189.6	1,142.0	1,243.2
Total Benefits † .....	3,382.8	3,205.9	3,583.8
Consumer Incremental Product Costs ‡ .....	659.8	689.4	632.6
Net Benefits .....	2,723.1	2,516.4	2,951.1
<b>7% discount rate</b>			
Consumer Operating Cost Savings .....	961.8	902.8	1,027.3

TABLE VI.2—ANNUALIZED BENEFITS AND COSTS OF PROPOSED ENERGY CONSERVATION STANDARDS FOR ALL DISTRIBUTION TRANSFORMERS AND PROPOSED STANDARD LEVELS—Continued

Category	Million 2021\$/year		
	Primary estimate	Low-net-benefits estimate	High-net-benefits estimate
Climate Benefits* (3% discount rate) .....	664.2	638.0	693.6
Health Benefits** .....	665.2	640.4	691.8
Total Benefits † .....	2,291.3	2,181.2	2,412.7
Consumer Incremental Product Costs ‡ .....	652.5	678.9	627.8
Net Benefits .....	1,638.7	1,502.5	1,784.9

This table presents the costs and benefits associated with distribution transformers shipped in 2027–2056. These results include benefits to consumers which accrue after 2056 from the products shipped in 2027–2056.

\*Climate benefits are calculated using four different estimates of the social cost of carbon (SC–CO<sub>2</sub>), methane (SC–CH<sub>4</sub>), and nitrous oxide (SC–N<sub>2</sub>O) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate), as shown in Table V.73, Table V.74, and Table V.75. Together these represent the global social cost of greenhouse gases (SC–GHG). For presentational purposes of this table, the climate benefits associated with the average SC–GHG at a 3 percent discount rate are shown, but the Department does not have a single central SC–GHG point estimate. See section IV.L of this document for more details. On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22–30087) granted the Federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21–cv–1074–JDC–KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the Federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. In the absence of further intervening court orders, DOE will revert to its approach prior to the injunction and present monetized benefits where appropriate and permissible under law.

\*\*Health benefits are calculated using benefit-per-ton values for NO<sub>x</sub> and SO<sub>2</sub>. The benefits are based on the low estimates of the monetized value. DOE is currently only monetizing (for SO<sub>x</sub> and NO<sub>x</sub>) PM<sub>2.5</sub> precursor health benefits and (for NO<sub>x</sub>) ozone precursor health benefits, but will continue to assess the ability to monetize other effects such as health benefits from reductions in direct PM<sub>2.5</sub> emissions. See section IV.L of this document for more details.

† Total and net benefits include consumer, climate, and health benefits. For presentation purposes, total and net benefits for both the 3-percent and 7-percent cases are presented using the average SC–GHG with 3-percent discount rate, but the Department does not have a single central SC–GHG point estimate. DOE emphasizes the importance and value of considering the benefits calculated using all four SC–GHG estimates. See Table V.69 for net benefits using all four SC–GHG estimates.

‡ Costs include incremental equipment costs as well as installation costs.

*B. Review Under the Regulatory Flexibility Act*

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires preparation of an initial regulatory flexibility analysis (“IRFA”) for any rule that by law must be proposed for public comment, unless the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. As required by E.O. 13272, “Proper Consideration of Small Entities in Agency Rulemaking,” 67 FR 53461 (Aug. 16, 2002), DOE published procedures and policies on February 19, 2003, to ensure that the potential impacts of its rules on small entities are properly considered during the rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the Office of the General Counsel’s website [www.energy.gov/gc/office-general-counsel](http://www.energy.gov/gc/office-general-counsel). DOE has prepared the following IRFA for the products that are the subject of this rulemaking.

For manufacturers of distribution transformers, the SBA has set a size threshold, which defines those entities classified as “small businesses” for the purposes of the statute. DOE used the SBA’s small business size standards to determine whether any small entities would be subject to the requirements of

the rule. (See 13 CFR part 121.) The size standards are listed by North American Industry Classification System (“NAICS”) code and industry description and are available at [www.sba.gov/document/support-table-size-standards](http://www.sba.gov/document/support-table-size-standards). Manufacturing of distribution transformers is classified under NAICS 335311, “Power, Distribution, and Specialty Transformer Manufacturing.” The SBA sets a threshold of 750 employees or fewer for an entity to be considered as a small business for this category.

1. Description of Reasons Why Action Is Being Considered

EPCA requires that, not later than 6 years after the issuance of any final rule establishing or amending a standard, DOE must publish either a notice of determination that standards for the product do not need to be amended, or a NOPR including new proposed energy conservation standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6316(e)(1); 42 U.S.C. 6295(m)(1)).

2. Objectives of, and Legal Basis for, Rule

DOE must follow specific statutory criteria for prescribing new or amended standards for covered equipment, including distribution transformers. Any new or amended standard for a covered product must be designed to

achieve the maximum improvement in energy efficiency that the Secretary of Energy determines is technologically feasible and economically justified. (42 U.S.C. 6316(a); 42 U.S.C. 6295(o)(2)(A) and 42 U.S.C. 6295(o)(3)(B)).

3. Description on Estimated Number of Small Entities Regulated

DOE conducted a more focused inquiry of the companies that could be small businesses that manufacture distribution transformers covered by this rulemaking. DOE used publicly available information to identify potential small businesses. DOE’s research involved industry trade association membership directories (including NEMA), DOE’s publicly available Compliance Certification Database (“CCD”), California Energy Commission’s MAEDBS database to create a list of companies that manufacture or sell distribution transformers covered by this rulemaking. DOE also asked stakeholders and industry representatives if they were aware of any other small businesses during manufacturer interviews. DOE contacted select companies on its list, as necessary, to determine whether they met the SBA’s definition of a small business that manufacturers distribution transformers covered by this rulemaking. DOE screened out

companies that did not offer products covered by this rulemaking, did not meet the definition of a “small business,” or are foreign owned and operated.

DOE’s analysis identified 29 companies that sell or manufacture distribution transformers covered by this rulemaking in the U.S. market. At least two of these companies are not the original equipment manufacturers (“OEM”) and instead privately label distribution transformers that are manufactured by another distribution transformer manufacturer. Of the 27 companies that are OEMs, DOE identified 10 potential companies that have fewer than 750 total employees and are not entirely foreign owned and operated. There are three small businesses that manufacture liquid-immersed distribution transformers; there are three small businesses that manufacture LVDT and MVDT distribution transformers; and there are four small businesses that only manufacture LVDT distribution transformers.<sup>115</sup>

#### Liquid-Immersed

Liquid-immersed distribution transformers account for over 80 percent of all distribution transformer shipments covered by this rulemaking. Six major manufacturers supply more than 80 percent of the market for liquid-immersed distribution transformers covered by this rulemaking. None of these six major manufacturers of liquid-immersed distribution transformers are small businesses. Most liquid-immersed distribution transformers are manufactured domestically. Electric utilities compose the customer base and typically buy on a first-cost basis. Many small manufacturers position themselves towards the higher end of the market or in particular product niches, such as network transformers or harmonic mitigating transformers, but, in general, competition is based on price after a given unit’s specs are prescribed by a customer. None of the three small businesses have a market share larger than five percent of the liquid-immersed distribution transformer market.

#### Low-Voltage Dry Type

LVDT distribution transformers account for approximately 18 percent of all distribution shipments covered by this rulemaking. Four major manufacturers supply more than 80 percent of the market for LVDT

distribution transformers covered by this rulemaking. None of these four major LVDT distribution transformer manufacturers are small businesses. The majority of LVDT distribution transformers are manufactured outside the U.S., mostly in Canada and Mexico. The customer base rarely purchases on efficiency and is very first-cost conscious, which, in turn, places a premium on economies of scale in manufacturing. However, there are universities and other buildings that purchase LVDT based on efficiency as more and more organizations are striving to get to reduced or net-zero emission targets.

In the LVDT market, lower volume manufacturers typically do not compete directly with larger volume manufacturers, as these lower volume manufacturers are frequently not able to compete on a first cost basis. However, there are lower volume manufactures that do serve customers that purchase more efficient LVDT distribution transformers. Lastly, there are some smaller firms that focus on the engineering and design of LVDT distribution transformers and source the production of some parts of the distribution transformer, most frequently the cores, to another company that manufactures those components.

#### Medium-Voltage Dry-Type

MVDT distribution transformers account for less than one percent of all distribution transformer shipments covered by this rulemaking. There is one large MVDT distribution transformer manufacturer with a substantial share of the market. The rest of MVDT distribution transformer market is served by a mix of large and small manufactures. Most MVDT distribution transformers are manufactured domestically. Electric utilities and industrial users make up most of the customer base and typically buy on first-cost or features other than efficiency.

#### 4. Description and Estimate of Compliance Requirements Including Differences in Cost, if Any, for Different Groups of Small Entities

##### Liquid-Immersed and Low-Voltage Dry-Type

DOE is proposing to amend energy conservation standards to be at TSL 4 for liquid-immersed distribution transformers and TSL 5 for LVDT distribution transformers. This corresponds to EL 4 for most liquid-immersed distribution transformer equipment classes and EL 5 for all

LVDT distribution transformer equipment classes.

Based on the LCC consumer choice model, DOE anticipates that most, if not all, liquid-immersed and LVDT distribution transformer manufacturers would use amorphous cores in their distribution transformers to meet these proposed amended energy conservation standards. While DOE anticipates that several large liquid-immersed and LVDT distribution transformer manufacturers would make significant capital investments to accommodate the production of amorphous cores, DOE does not anticipate that any small businesses will make these capital investments to be able to produce their own amorphous cores, based on the large capital investments need to be able to make amorphous cores and the limited ability for small businesses to access large capital investments. Based on manufacturer interviews and market research, DOE was able to identify one LVDT small business that manufactures their own cores and was not able to identify any liquid-immersed small businesses that manufacture their own cores. The one LVDT small business that is currently manufacturing their own cores would have to make a business decision to either make a significant capital investment to be able to make amorphous cores or to out-source the production of their LVDT cores. Out-sourcing the production of their cores would be a significant change in their production process and could result in a reduction in this small business’ market share in the LVDT distribution transformer market.

DOE acknowledges that there is uncertainty if these small businesses will be able to find core manufacturers that will supply them with amorphous cores in order to comply with the proposed energy conservation standards for liquid-immersed and LVDT distribution transformers. DOE anticipates that there will be an increase in the number of large liquid-immersed and LVDT distribution transformer manufacturers that will out-source the production of their cores to core manufacturers capable of producing amorphous cores. This could increase the competition for small businesses to procure amorphous cores for their distribution transformers. Small businesses manufacturing liquid-immersed and LVDT distribution transformers must be able to procure amorphous cores suitable for their distribution transformers at a cost that allows them to continue to be competitive in the market.

Based on feedback received during manufacturer interviews, DOE does not

<sup>115</sup> Therefore, there are a total of seven small businesses that manufacture LVDT distribution transformers. Four that exclusively manufacture LVDT and three that manufacture both LVDT and MVDT.

anticipate that small businesses that are currently not producing their own cores would have to make a significant capital investment in their production lines to be able to use amorphous cores, that are purchased from a core manufacturer, in the distribution transformers that they manufacture. There will be some additional product conversion costs, in the form of additional R&D and testing, that will need to be incurred by small businesses that manufacture liquid-immersed and LVDT distribution transformers, even if they do not manufacture their own cores. The methodology used to calculate product conversion costs, described in section IV.J.2.c, estimates that manufacturers would incur approximately one additional year of R&D expenditure to redesign their distribution transformers to be capable of accommodating the use of an amorphous core. Based on the financial parameters used in the GRIM, DOE estimated that the normal annual R&D is approximately 3.0 percent of annual revenue. Therefore, liquid-immersed and LVDT small businesses would incur an additional 3.0 percent of annual revenue to redesign their distribution transformers to be able to accommodate using amorphous cores there were purchased from core manufacturers.

#### Medium-Voltage Dry-Type

DOE is proposing to amend energy conservation standards to be at TSL 2 for MVDT distribution transformers. This corresponds to EL 2 for all MVDT distribution transformer equipment classes. Based on the LCC consumer choice model, DOE does not anticipate that any MVDT distribution transformer manufacturers would use amorphous cores in their MVDT distribution transformers to meet these proposed energy conservation standards. DOE does not anticipate that MVDT manufacturers would make significant investments to either be able to produce cores capable of meeting these proposed amended energy conservation standards or be able to integrate more efficient purchased cores from core manufacturers. There will be some additional product conversion costs, in the form of additional R&D and testing, that will need to be incurred by small businesses that manufacture MVDT distribution transformers, even if they do not manufacture their own cores. The methodology used to calculate product conversion costs, described in section IV.J.2.c, estimates that manufacturers would incur approximately a half of a year of additional R&D expenditure to redesign their distribution transformers to higher

efficiency levels, while not using amorphous cores. Based on the financial parameters used in the GRIM, DOE estimated that the normal annual R&D is approximately 3.0 percent of annual revenue. Therefore, MVDT small businesses would include an additional 1.5 percent of annual revenue to redesign, MVDT distribution transformers to higher efficiency levels that could be met without using amorphous cores.

DOE requests comment on the number of small businesses identified that manufacture distribution transformers covered by this rulemaking (three small liquid-immersed and seven LVDT small businesses; three of which also manufacture MVDT). Additionally, DOE requests comment on its initial assumption that only one LVDT small business and no liquid-immersed small businesses manufacturer their own cores used in their distribution transformers.

#### 5. Duplication, Overlap, and Conflict With Other Rules and Regulations

Starting in 2018, imports of raw electrical steel have been subject to a 25 percent *ad valorem* tariff. This tariff does not apply to products made from electrical steel, such as transformer laminations and finished cores. In a report published on November 18, 2021, the Department of Commerce presented its conclusions and potential options to ensure the domestic supply chain of electrical steel and transformer components. 86 FR 64606 However, no modifications to the tariff structure have been made at the time of publication of this NOPR. As discussed in section IV.A.5, modification to the tariff structure could impact the pricing and availability of certain electrical steel grades depending on each manufacturer's given supply chain and sourcing practices.

DOE is not aware of any other rules or regulations that duplicate, overlap, or conflict with the rule being considered today.

#### 6. Significant Alternatives to the Rule

The discussion in the previous section analyzes impacts on small businesses that would result from DOE's proposed rule, represented by TSL 4 for liquid-immersed distribution transformer equipment classes; TSL 5 for LVDT equipment classes; and TSL 2 for MVDT equipment classes. In reviewing alternatives to the proposed rule, DOE examined energy conservation standards set at lower efficiency levels. While lower TSLs would reduce the impacts on small business manufacturers, it would come

at the expense of a reduction in energy savings. For liquid-immersed equipment classes TSL 1 achieves 60 percent lower energy savings compared to the energy savings at TSL 4; TSL 2 achieves 37 percent lower energy savings compared to the energy savings at TSL 4. For LVDT equipment classes TSL 1 achieves 85 percent lower energy savings compared to the energy savings at TSL 5; TSL 2 achieves 78 percent lower energy savings compared to the energy savings at TSL 5; TSL 3 achieves 66 percent lower energy savings compared to the energy savings at TSL 5; and TSL 4 achieves 8 percent lower energy savings compared to the energy savings at TSL 5. For MVDT equipment classes TSL 1 achieves 33 percent lower energy savings compared to the energy savings at TSL 2.

Based on the presented discussion, DOE tentatively concludes that the benefits of the energy savings from TSL 4 for liquid-immersed equipment classes; TSL 5 for LVDT equipment classes; and TSL 2 for MVDT equipment classes exceed the potential burdens placed on distribution transformers manufacturers, including small business manufacturers. Accordingly, DOE does not propose one of the other TSLs considered in the analysis, or the other policy alternatives examined as part of the regulatory impact analysis and included in chapter 17 of the NOPR TSD.

Additional compliance flexibilities may be available through other means. EPCA provides that a manufacturer whose annual gross revenue from all of its operations does not exceed \$8 million may apply for an exemption from all or part of an energy conservation standard for a period not longer than 24 months after the effective date of a final rule establishing the standard. (42 U.S.C. 6295(t)) Additionally, manufacturers subject to DOE's energy efficiency standards may apply to DOE's Office of Hearings and Appeals for exception relief under certain circumstances. Manufacturers should refer to 10 CFR part 430, subpart E, and 10 CFR part 1003 for additional details.

#### C. Review Under the Paperwork Reduction Act

Manufacturers of distribution transformers must certify to DOE that their products comply with any applicable energy conservation standards. In certifying compliance, manufacturers must test their products according to the DOE test procedures for distribution transformers, including any amendments adopted for those test procedures. DOE has established

regulations for the certification and recordkeeping requirements for all covered consumer products and commercial equipment, including distribution transformers. (See generally 10 CFR part 429). The collection-of-information requirement for the certification and recordkeeping is subject to review and approval by OMB under the Paperwork Reduction Act (“PRA”). This requirement has been approved by OMB under OMB control number 1910–1400. Public reporting burden for the certification is estimated to average 35 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB Control Number.

#### *D. Review Under the National Environmental Policy Act of 1969*

DOE is analyzing this proposed regulation in accordance with the National Environmental Policy Act of 1969 (“NEPA”) and DOE’s NEPA implementing regulations (10 CFR part 1021). DOE’s regulations include a categorical exclusion for rulemakings that establish energy conservation standards for consumer products or industrial equipment. 10 CFR part 1021, subpart D, appendix B5.1. DOE anticipates that this rulemaking qualifies for categorical exclusion B5.1 because it is a rulemaking that establishes energy conservation standards for consumer products or industrial equipment, none of the exceptions identified in categorical exclusion B5.1(b) apply, no extraordinary circumstances exist that require further environmental analysis, and it otherwise meets the requirements for application of a categorical exclusion. See 10 CFR 1021.410. DOE will complete its NEPA review before issuing the final rule.

#### *E. Review Under Executive Order 13132*

E.O. 13132, “Federalism,” 64 FR 43255 (Aug. 10, 1999), imposes certain requirements on Federal agencies formulating and implementing policies or regulations that preempt State law or that have federalism implications. The Executive order requires agencies to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion

of the States and to carefully assess the necessity for such actions. The Executive order also requires agencies to have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications. On March 14, 2000, DOE published a statement of policy describing the intergovernmental consultation process it will follow in the development of such regulations. 65 FR 13735. DOE has examined this proposed rule and has tentatively determined that it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. EPCA governs and prescribes Federal preemption of State regulations as to energy conservation for the equipment that are the subject of this proposed rule. States can petition DOE for exemption from such preemption to the extent, and based on criteria, set forth in EPCA. (42 U.S.C. 6297) Therefore, no further action is required by Executive Order 13132.

#### *F. Review Under Executive Order 12988*

With respect to the review of existing regulations and the promulgation of new regulations, section 3(a) of E.O. 12988, “Civil Justice Reform,” imposes on Federal agencies the general duty to adhere to the following requirements: (1) eliminate drafting errors and ambiguity, (2) write regulations to minimize litigation, (3) provide a clear legal standard for affected conduct rather than a general standard, and (4) promote simplification and burden reduction. 61 FR 4729 (Feb. 7, 1996). Regarding the review required by section 3(a), section 3(b) of E.O. 12988 specifically requires that Executive agencies make every reasonable effort to ensure that the regulation: (1) clearly specifies the preemptive effect, if any, (2) clearly specifies any effect on existing Federal law or regulation, (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction, (4) specifies the retroactive effect, if any, (5) adequately defines key terms, and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in section 3(a) and section 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE has completed the required

review and determined that, to the extent permitted by law, this proposed rule meets the relevant standards of E.O. 12988.

#### *G. Review Under the Unfunded Mandates Reform Act of 1995*

Title II of the Unfunded Mandates Reform Act of 1995 (“UMRA”) requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and Tribal governments and the private sector. Public Law 104–4, section 201 (codified at 2 U.S.C. 1531). For a proposed regulatory action likely to result in a rule that may cause the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector of \$100 million or more in any one year (adjusted annually for inflation), section 202 of UMRA requires a Federal agency to publish a written statement that estimates the resulting costs, benefits, and other effects on the national economy. (2 U.S.C. 1532(a), (b)) The UMRA also requires a Federal agency to develop an effective process to permit timely input by elected officers of State, local, and Tribal governments on a proposed “significant intergovernmental mandate,” and requires an agency plan for giving notice and opportunity for timely input to potentially affected small governments before establishing any requirements that might significantly or uniquely affect them. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820. DOE’s policy statement is also available at [www.energy.gov/sites/prod/files/gcprod/documents/umra\\_97.pdf](http://www.energy.gov/sites/prod/files/gcprod/documents/umra_97.pdf).

Although this proposed rule does not contain a Federal intergovernmental mandate, it may require expenditures of \$100 million or more in any one year by the private sector. Such expenditures may include: (1) investment in research and development and in capital expenditures by distribution transformers manufacturers in the years between the final rule and the compliance date for the new standards and (2) incremental additional expenditures by consumers to purchase higher-efficiency distribution transformers, starting at the compliance date for the applicable standard.

Section 202 of UMRA authorizes a Federal agency to respond to the content requirements of UMRA in any other statement or analysis that accompanies the proposed rule. (2 U.S.C. 1532(c)) The content requirements of section 202(b) of UMRA relevant to a private sector mandate substantially overlap the economic analysis requirements that apply under section 325(o) of EPCA and

Executive Order 12866. The **SUPPLEMENTARY INFORMATION** section of this NOPR and the TSD for this proposed rule respond to those requirements.

Under section 205 of UMRA, the Department is obligated to identify and consider a reasonable number of regulatory alternatives before promulgating a rule for which a written statement under section 202 is required. (2 U.S.C. 1535(a)) DOE is required to select from those alternatives the most cost-effective and least burdensome alternative that achieves the objectives of the proposed rule unless DOE publishes an explanation for doing otherwise, or the selection of such an alternative is inconsistent with law. As required by 42 U.S.C. 6295(m) [or a product-specific directive in 42 U.S.C. 6295 or 42 U.S.C. 6313], this proposed rule would establish amended energy conservation standards for distribution transformers that are designed to achieve the maximum improvement in energy efficiency that DOE has determined to be both technologically feasible and economically justified, as required by 42 U.S.C. 6295(o)(2)(A) and 42 U.S.C. 6295(o)(3)(B). A full discussion of the alternatives considered by DOE is presented in chapter 17 of the TSD for this proposed rule.

#### *H. Review Under the Treasury and General Government Appropriations Act, 1999*

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub. L. 105–277) requires Federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. This proposed rule would not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE has concluded that it is not necessary to prepare a Family Policymaking Assessment.

#### *I. Review Under Executive Order 12630*

Pursuant to E.O. 12630, “Governmental Actions and Interference with Constitutionally Protected Property Rights,” 53 FR 8859 (Mar. 15, 1988), DOE has determined that this proposed rule would not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

#### *J. Review Under the Treasury and General Government Appropriations Act, 2001*

Section 515 of the Treasury and General Government Appropriations Act, 2001 (44 U.S.C. 3516 note) provides

for Federal agencies to review most disseminations of information to the public under information quality guidelines established by each agency pursuant to general guidelines issued by OMB. OMB’s guidelines were published at 67 FR 8452 (Feb. 22, 2002), and DOE’s guidelines were published at 67 FR 62446 (Oct. 7, 2002). Pursuant to OMB Memorandum M–19–15, Improving Implementation of the Information Quality Act (April 24, 2019), DOE published updated guidelines which are available at [www.energy.gov/sites/prod/files/2019/12/f70/DOE%20Final%20Updated%20IQA%20Guidelines%20Dec%202019.pdf](http://www.energy.gov/sites/prod/files/2019/12/f70/DOE%20Final%20Updated%20IQA%20Guidelines%20Dec%202019.pdf). DOE has reviewed this NOPR under the OMB and DOE guidelines and has concluded that it is consistent with applicable policies in those guidelines.

#### *K. Review Under Executive Order 13211*

E.O. 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” 66 FR 28355 (May 22, 2001), requires Federal agencies to prepare and submit to OIRA at OMB, a Statement of Energy Effects for any proposed significant energy action. A “significant energy action” is defined as any action by an agency that promulgates or is expected to lead to promulgation of a final rule, and that (1) is a significant regulatory action under Executive Order 12866, or any successor order; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy, or (3) is designated by the Administrator of OIRA as a significant energy action. For any proposed significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use should the proposal be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use.

DOE has tentatively concluded that this regulatory action, which proposes amended energy conservation standards for distribution transformers, is not a significant energy action because the proposed standards are not likely to have a significant adverse effect on the supply, distribution, or use of energy, nor has it been designated as such by the Administrator at OIRA. Accordingly, DOE has not prepared a Statement of Energy Effects on this proposed rule.

#### *L. Information Quality*

On December 16, 2004, OMB, in consultation with the Office of Science and Technology Policy (“OSTP”), issued its Final Information Quality Bulletin for Peer Review (“the

Bulletin”). 70 FR 2664 (Jan. 14, 2005). The Bulletin establishes that certain scientific information shall be peer reviewed by qualified specialists before it is disseminated by the Federal Government, including influential scientific information related to agency regulatory actions. The purpose of the bulletin is to enhance the quality and credibility of the Government’s scientific information. Under the Bulletin, the energy conservation standards rulemaking analyses are “influential scientific information,” which the Bulletin defines as “scientific information the agency reasonably can determine will have, or does have, a clear and substantial impact on important public policies or private sector decisions.” 70 FR 2664, 2667.

In response to OMB’s Bulletin, DOE conducted formal peer reviews of the energy conservation standards development process and the analyses that are typically used and has prepared a report describing that peer review.<sup>116</sup> Generation of this report involved a rigorous, formal, and documented evaluation using objective criteria and qualified and independent reviewers to make a judgment as to the technical/scientific/business merit, the actual or anticipated results, and the productivity and management effectiveness of programs and/or projects. Because available data, models, and technological understanding have changed since 2007, DOE has engaged with the National Academy of Sciences to review DOE’s analytical methodologies to ascertain whether modifications are needed to improve the Department’s analyses. DOE is in the process of evaluating the resulting report.<sup>117</sup>

## **VII. Public Participation**

### *A. Attendance at the Public Meeting*

The time and date of the webinar meeting are listed in the **DATES** section at the beginning of this document. Webinar registration information, participant instructions, and information about the capabilities available to webinar participants will be published on DOE’s website: [www.eere.energy.gov/buildings/appliance\\_standards/standards.aspx?productid=55](http://www.eere.energy.gov/buildings/appliance_standards/standards.aspx?productid=55).

<sup>116</sup> The 2007 “Energy Conservation Standards Rulemaking Peer Review Report” is available at the following website: [energy.gov/eere/buildings/downloads/energy-conservation-standards-rulemaking-peer-review-report-0](http://energy.gov/eere/buildings/downloads/energy-conservation-standards-rulemaking-peer-review-report-0) (last accessed January 2022).

<sup>117</sup> The report is available at [www.nationalacademies.org/our-work/review-of-methods-for-setting-building-and-equipment-performance-standards](http://www.nationalacademies.org/our-work/review-of-methods-for-setting-building-and-equipment-performance-standards).

Participants are responsible for ensuring their systems are compatible with the webinar software.

#### *B. Procedure for Submitting Prepared General Statements for Distribution*

Any person who has an interest in the topics addressed in this proposed rule, or who is representative of a group or class of persons that has an interest in these issues, may request an opportunity to make an oral presentation at the webinar. Such persons may submit to [ApplianceStandardsQuestions@ee.doe.gov](mailto:ApplianceStandardsQuestions@ee.doe.gov). Persons who wish to speak should include with their request a computer file in WordPerfect, Microsoft Word, PDF, or text (ASCII) file format that briefly describes the nature of their interest in this rulemaking and the topics they wish to discuss. Such persons should also provide a daytime telephone number where they can be reached.

DOE requests persons selected to make an oral presentation to submit an advance copy of their statements at least two weeks before the webinar. At its discretion, DOE may permit persons who cannot supply an advance copy of their statement to participate, if those persons have made advance alternative arrangements with the Building Technologies Office. As necessary, requests to give an oral presentation should ask for such alternative arrangements.

DOE will designate a DOE official to preside at the webinar/public meeting and may also use a professional facilitator to aid discussion. The meeting will not be a judicial or evidentiary-type public hearing, but DOE will conduct it in accordance with section 336 of EPCA (42 U.S.C. 6306). A court reporter will be present to record the proceedings and prepare a transcript. DOE reserves the right to schedule the order of presentations and to establish the procedures governing the conduct of the webinar. There shall not be discussion of proprietary information, costs or prices, market share, or other commercial matters regulated by U.S. anti-trust laws. After the webinar and until the end of the comment period, interested parties may submit further comments on the proceedings and any aspect of the rulemaking.

The webinar will be conducted in an informal, conference style. DOE will a general overview of the topics addressed in this rulemaking, allow time for prepared general statements by participants, and encourage all interested parties to share their views on issues affecting this rulemaking. Each

participant will be allowed to make a general statement (within time limits determined by DOE), before the discussion of specific topics. DOE will permit, as time permits, other participants to comment briefly on any general statements.

At the end of all prepared statements on a topic, DOE will permit participants to clarify their statements briefly. Participants should be prepared to answer questions by DOE and by other participants concerning these issues. DOE representatives may also ask questions of participants concerning other matters relevant to this proposed rule. The official conducting the webinar/public meeting will accept additional comments or questions from those attending, as time permits. The presiding official will announce any further procedural rules or modification of the above procedures that may be needed for the proper conduct of the webinar.

A transcript of the webinar will be included in the docket, which can be viewed as described in the *Docket* section at the beginning of this proposed rule. In addition, any person may buy a copy of the transcript from the transcribing reporter.

#### *C. Conduct of the Public Webinar*

DOE will designate a DOE official to preside at the webinar/public meeting and may also use a professional facilitator to aid discussion. The meeting will not be a judicial or evidentiary-type public hearing, but DOE will conduct it in accordance with section 336 of EPCA (42 U.S.C. 6306). A court reporter will be present to record the proceedings and prepare a transcript. DOE reserves the right to schedule the order of presentations and to establish the procedures governing the conduct of the webinar. There shall not be discussion of proprietary information, costs or prices, market share, or other commercial matters regulated by U.S. anti-trust laws. After the webinar and until the end of the comment period, interested parties may submit further comments on the proceedings and any aspect of the rulemaking.

The webinar will be conducted in an informal, conference style. DOE will a general overview of the topics addressed in this rulemaking, allow time for prepared general statements by participants, and encourage all interested parties to share their views on issues affecting this rulemaking. Each participant will be allowed to make a general statement (within time limits determined by DOE), before the discussion of specific topics. DOE will

permit, as time permits, other participants to comment briefly on any general statements.

At the end of all prepared statements on a topic, DOE will permit participants to clarify their statements briefly. Participants should be prepared to answer questions by DOE and by other participants concerning these issues. DOE representatives may also ask questions of participants concerning other matters relevant to this rulemaking. The official conducting the webinar/public meeting will accept additional comments or questions from those attending, as time permits. The presiding official will announce any further procedural rules or modification of the above procedures that may be needed for the proper conduct of the webinar.

A transcript of the webinar will be included in the docket, which can be viewed as described in the *Docket* section at the beginning of this proposed rule. In addition, any person may buy a copy of the transcript from the transcribing reporter.

#### *D. Submission of Comments*

DOE will accept comments, data, and information regarding this proposed rule before or after the public meeting, but no later than the date provided in the **DATES** section at the beginning of this proposed rule. Interested parties may submit comments, data, and other information using any of the methods described in the **ADDRESSES** section at the beginning of this document.

*Submitting comments via [www.regulations.gov](http://www.regulations.gov).* The [www.regulations.gov](http://www.regulations.gov) web page will require you to provide your name and contact information. Your contact information will be viewable to DOE Building Technologies staff only. Your contact information will not be publicly viewable except for your first and last names, organization name (if any), and submitter representative name (if any). If your comment is not processed properly because of technical difficulties, DOE will use this information to contact you. If DOE cannot read your comment due to technical difficulties and cannot contact you for clarification, DOE may not be able to consider your comment.

However, your contact information will be publicly viewable if you include it in the comment itself or in any documents attached to your comment. Any information that you do not want to be publicly viewable should not be included in your comment, nor in any document attached to your comment. Otherwise, persons viewing comments will see only first and last names,



organization names, correspondence containing comments, and any documents submitted with the comments.

Do not submit to *www.regulations.gov* information for which disclosure is restricted by statute, such as trade secrets and commercial or financial information (hereinafter referred to as Confidential Business Information (“CBI”). Comments submitted through *www.regulations.gov* cannot be claimed as CBI. Comments received through the website will waive any CBI claims for the information submitted. For information on submitting CBI, see the Confidential Business Information section.

DOE processes submissions made through *www.regulations.gov* before posting. Normally, comments will be posted within a few days of being submitted. However, if large volumes of comments are being processed simultaneously, your comment may not be viewable for up to several weeks. Please keep the comment tracking number that *www.regulations.gov* provides after you have successfully uploaded your comment.

*Submitting comments via email.* Comments and documents submitted via email also will be posted to *www.regulations.gov*. If you do not want your personal contact information to be publicly viewable, do not include it in your comment or any accompanying documents. Instead, provide your contact information in a cover letter. Include your first and last names, email address, telephone number, and optional mailing address. The cover letter will not be publicly viewable as long as it does not include any comments.

Include contact information each time you submit comments, data, documents, and other information to DOE. No telefacsimiles (“faxes”) will be accepted.

Comments, data, and other information submitted to DOE electronically should be provided in PDF (preferred), Microsoft Word or Excel, WordPerfect, or text (ASCII) file format. Provide documents that are not secured, that are written in English, and that are free of any defects or viruses. Documents should not contain special characters or any form of encryption and, if possible, they should carry the electronic signature of the author.

*Campaign form letters.* Please submit campaign form letters by the originating organization in batches of between 50 to 500 form letters per PDF or as one form letter with a list of supporters’ names compiled into one or more PDFs. This

reduces comment processing and posting time.

*Confidential Business Information.* Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit via email two well-marked copies: one copy of the document marked “confidential” including all the information believed to be confidential, and one copy of the document marked “non-confidential” with the information believed to be confidential deleted. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

It is DOE’s policy that all comments may be included in the public docket, without change and as received, including any personal information provided in the comments (except information deemed to be exempt from public disclosure).

#### *E. Issues on Which DOE Seeks Comment*

Although DOE welcomes comments on any aspect of this proposal, DOE is particularly interested in receiving comments and views of interested parties concerning the following issues:

(1) DOE requests comment on the proposed amendment to the definition of drive (isolation) transformer. DOE requests comment on its tentative determination that voltage ratings of 208Y/120 and 480Y/277 indicate a design for use in general purpose applications. DOE also requests comment on other voltage ratings or other characteristics that would indicate a design for use in general purpose applications.

(2) DOE requests comment on its proposed amendment to the definition of “special-impedance transformer” and whether it provides sufficient clarity as to how to treat the normal impedance ranges for non-standard kVA distribution transformers.

(3) DOE requests comment on its proposed definition for transformers with a tap range of 20 percent or more.

(4) DOE requests comment on its proposed amendments to the definitions of sealed and nonventilated transformers.

(5) DOE requests comment on its proposed amendment to the definition of uninterruptible power supply transformers.

(6) DOE requests comment as to whether its proposed definition better aligns with industries understanding on input and output voltages

(7) Further, DOE requests comment and data on whether the proposed amendment would impact products that

are serving distribution applications, and if so, the number of distribution transformers impacted by the proposed amendment.

(8) DOE requests comment and data as to whether 5,000 kVA represents the upper end of what is considered distribution transformers or if another value should be used.

(9) DOE requests comment and data as to the number of shipments of three-phase, liquid-immersed, distribution transformers greater than 2,500 kVA that would meet the in-scope voltage limitations and the distribution of efficiencies of those units.

(10) DOE requests comment and data as to the number of shipments of three-phase, dry-type, distribution transformers greater than 2,500 kVA that would meet the in-scope voltage limitations and the distribution of efficiencies of those units.

(11) DOE requests comment on its understanding and proposed definition of “submersible” distribution transformer. Specifically, DOE requests information on specific design characteristics of distribution transformers that allow them to operate while submerged in water, as well as data on the impact to efficiency resulting from such characteristics.

(12) DOE requests comment and data as to the impact that submersible characteristics have on distribution transformer efficiency.

(13) DOE requests data on the difference in load loss by kVA for distribution transformers with multiple-voltage ratings and a voltage ratio other than 2:1.

(14) DOE request data on the number of shipments for each equipment class of distribution transformers with multi-voltage ratios other than 2:1.

(15) DOE requests data on the difference in load loss by kVA for distribution transformers with higher currents and at what current it becomes more difficult to meet energy conservation standards.

(16) DOE requests data as to the number of shipments of distribution transformers with the higher currents that would have a more difficult time meeting energy conservation standards.

(17) DOE requests comment as to what modifications could be made to the April 2013 Standard Final Rule data center definition such that the identifying features are related to efficiency and would prevent a data center transformer from being used in a general purpose application.

(18) DOE requests comment regarding its proposal not to establish a separate equipment class for data center distribution transformers. In particular,

DOE seeks comment regarding whether data center distribution transformers are able to reach the same efficiency levels as distribution transformers generally and the specific reasons why that may be the case.

(19) DOE requests comment regarding any challenges that would exist if designing a distribution transformer which uses amorphous electrical steel in its core for data center applications and whether data center transformers have been built which use amorphous electrical steel in their cores.

(20) DOE requests comment on the interaction of inrush current and data center distribution transformer design. Specifically, DOE seeks information regarding: (1) the range of inrush current limit values in use in data center distribution transformers; (2) any challenges in meeting such inrush current limit values when using amorphous electrical steel in the core; (3) whether using amorphous electrical steel inherently increases inrush current, and why; (4) how the (magnetic) remanence of grain-oriented electrical steel compares to that of amorphous steel; and (5) other strategies or technologies than distribution transformer design which could be used to limit inrush current and the respective costs of those measures.

(21) DOE requests data as to how a liquid-immersed distribution transformer losses vary with BIL across the range of kVA values within scope.

(22) DOE requests comments and data on any other types of equipment that may have a harder time meeting energy conservation standards. Specifically, DOE requests comments as to how these other equipment are identified based on physical features from general purpose distribution transformers, the number of shipments of each unit, and the possibility of these equipment being used in place of generally purpose distribution transformers.

(23) DOE requests data demonstrating any specific distribution transformer designs that would have significantly different cost-efficiency curves than those representative units modeled by DOE.

(24) DOE requests comment on its methodology for scaling RU5, RU12, and RU14 to represent the efficiency of units above 3,750 kVA.

(25) DOE requests comment on its methodology for modifying the results of RU4 and RU5 to represent the efficiency of submersible liquid-immersed units. For other potentially disadvantaged designs, DOE has considered establishing equipment classes to separate out those that would have the most difficulty achieving

amended efficiency standards, as discussed in section IV.A.2 of this document, but ultimately has determined not to include such separate equipment classes in the proposed standards. However, DOE requests data as to the degree of reduction in efficiency associated with various features.

(26) DOE requests data as to how stray and eddy losses at rated PUL vary with kVA and rated voltages.

(27) DOE requests comment on the current and future market pressures influencing the price of GOES. Specifically, DOE is interested in the barriers to and costs associated with converting a factory production line from GOES to NOES.

(28) DOE further requests comment regarding how the prices of both GOES and amorphous are expected to change in the immediate and distant future.

(29) DOE requests comment regarding the barriers to converting current M3 or 23hib90 electrical steel production to lower-loss GOES core steels.

(30) DOE requests comment as to if there are markets for amorphous ribbon, similar to NOES competition from GOES production, which would put competitive pressures on the production of amorphous ribbon for distribution transformers.

(31) DOE requests comment on how a potentially limited supply of transformer core steel, both of amorphous and GOES, may affect core steel price and availability. DOE seeks comment on any factors which uniquely affect specific steel grades (*e.g.*, amorphous, M-grades, hib, dr, pdr). Additionally, DOE seeks comment on how it should model a potentially concentrated domestic steel market in its analysis, resulting from a limited number of suppliers for the amorphous market or from competition with NOES for the GOES market, including any use of game theoretic modeling as appropriate.

(32) DOE requests comment or data showing hourly transformer loads for industrial customers.

(33) To help inform DOE's prediction of future load growth trend, DOE seeks data on the following for regions where decarbonization efforts are ongoing. DOE seeks hourly PUL data at the level of the transformer bank for each of the past five years to establish an unambiguous relationship between transformer loads and decarbonization policy and inform if any intensive load growth is indeed occurring. Additionally, DOE seeks the average capacity of shipment into regions where decarbonization efforts are occurring over the same five-year period to inform

the rate of any extensive load growth that may be occurring in response to these programs.

(34) DOE requests comments on its methodology for establishing the energy efficiency levels for distribution transformers greater than 2500 kVA. DOE request comment on its assumed energy efficiency ratings.

(35) DOE requests comment on its assumed TOC adoption rate of 10 percent. Specifically, DOE requests comment on the TOC rate suggested by NEMA, that between 15 and 20 percent of 3-phase liquid-immersed distribution transformers are purchased using TOC, and that 40 percent of 1-phase liquid-immersed distribution transformers are purchased using TOC. DOE notes, that it is seeking data related to concluded sales based on lowest TOC in the strictest sense, excluding those transformers sold using band of equivalents (see the section on band of equivalents, above)

(36) DOE requests comment on the fraction of distribution transformers purchased by customers using the BOE methodology. DOE notes, that it is seeking data related to concluded sales based on lowest BOE in the strictest sense, excluding those transformers sold using total owning costs.

(37) DOE request comment if the rates of TOC or BOE vary by transformer capacity or number of phases. Further, DOE seeks the fraction of distribution transformer sales using either method into the different regions in order to capture the believed relationship between higher electricity costs and purchase evaluation behavior.

(38) Transformers are typically installed using a bucket truck, or crane truck. DOE requests comment on the typical maximum lifting capacity, and the typical transformer capacity being installed.

(39) For this NOPR, DOE reiterates its request for the following information. DOE requests data and feedback on the size limitations of pad-mounted distribution transformers. Specifically, what sizes, voltages, or other features are currently unable to fit on current pads, and the dimension of these pads. DOE seeks data on the typical concrete pad dimensions for 50 and 500 kVA single-; and 500, and 1500 kVA three-phase distribution transformers. DOE seeks data on the typical service lifetimes of supporting concrete pads.

(40) DOE request the average extension of distribution transformer service life that can be achieved through rebuilding. Additionally, DOE requests comment on the fraction of transformer that are repaired by their original purchasing entity and returned to

service, thereby extending the transformer's service lifetime beyond the estimated lifetimes of 32 years with a maximum of 60 years.

(41) DOE requests comment on which liquid-immersed distribution transformers capacities are typically replaced with MVDT. DOE further requests data that would indicate a trend in these substitutions. DOE further requests data that would help it determine which types of customers are performing these substitutions, *e.g.*, industrial customers, inventor owned utilities, MUNIs, etc.

(42) In response to NEMA's comment DOE requests data to inform a shift in the capacity distribution to larger capacity distribution transformers. Additionally, DOE requests information on the extent that this increasing trend in capacity would affect all types of distribution transformers, or only medium-voltage distribution transformers.

(43) DOE projected the energy savings, operating cost savings, product costs, and NPV of consumer benefits over the lifetime of distribution transformers sold from 2027 through 2056. Given the extremely durable nature of distribution transformers, this creates an analytical timeframe from 2027 through 2115. DOE seeks comment on the current analytical timeline, and potential alternative analytical timeframes.

(44) DOE requests comment on its assumption that including a rebound effect is inappropriate for distribution transformers.

(45) DOE requests comment on the mean PUL applied to distribution transformers owned and operated by utilities serving low customer populations.

(46) DOE requests comment on its assumed vault replacement costs methodology. DOE seeks comment or data regarding the installation procedures associated with vault replacement, vault expansion (renovation), and vault transformer installation and their respective costs for replacement transformers. Additionally, DOE seeks information on the typical expected lifetime of underground concrete vaults.

(47) DOE requests comment on the real discount rates used in this NOPR. Specifically, if 7.4 percent for liquid-immersed distribution transformer manufacturers, 11.1 percent for low-voltage dry-type distribution transformer manufacturers, and 9.0 percent for medium-voltage dry-type distribution transformer manufacturers are appropriate discount rates to use in the GRIM.

(48) DOE requests comment on the estimated potential domestic employment impacts on distribution transformer manufacturers presented in this NOPR.

(49) DOE requests comment on the potential availability of either amorphous steel, grain-oriented electrical steel, or any other materials that may be needed to meet any of the analyzed energy conservation standards in this rulemaking. More specifically, DOE requests comment on steel manufacturers' ability to increase supply of amorphous steel in reaction to increased demand for amorphous steel as a result of increased energy conservation standards for distribution transformers.

(50) DOE requests comment on the number of small businesses identified that manufacture distribution transformers covered by this rulemaking (three small liquid-immersed and seven LVDT small businesses; three of which also manufacture MVDT). Additionally, DOE requests comment on its initial assumption that only one LVDT small business and no liquid-immersed small businesses manufacture their own cores used in their distribution transformers.

(51) Additionally, DOE welcomes comments on other issues relevant to the conduct of this rulemaking that may not specifically be identified in this document.

#### VIII. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this notice of proposed rulemaking and announcement of public meeting.

#### List of Subjects in 10 CFR Part 431

Administrative practice and procedure, Confidential business information, Energy conservation test procedures, and Reporting and recordkeeping requirements.

#### Signing Authority

This document of the Department of Energy was signed on December 28, 2022, by Francisco Alejandro Moreno, Acting Assistant Secretary for Energy Efficiency and Renewable Energy, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of

the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the **Federal Register**.

Signed in Washington, DC, on December 29, 2022.

**Treena V. Garrett,**

*Federal Register Liaison Officer, U.S. Department of Energy*

For the reasons set forth in the preamble, DOE proposes to amend part 431 of chapter II, of title 10 of the Code of Federal Regulations, as set forth below:

#### PART 431—ENERGY EFFICIENCY PROGRAM FOR CERTAIN COMMERCIAL AND INDUSTRIAL EQUIPMENT

■ 1. The authority citation for part 431 continues to read as follows:

**Authority:** 42 U.S.C. 6291–6317; 28 U.S.C. 2461 note.

■ 2. Section 431.192 is amended by:

- a. Revising the definitions of “Distribution transformer”, “Drive (isolation) transformer”, “Nonventilated transformer”, “Sealed transformer”, “Special-impedance transformer”, “Transformer with a tap range of 20 percent or more”, “Uninterruptible power supply transformer”; and
- b. Adding in alphabetical order, definition for “Submersible distribution transformer”

The revisions and addition read as follows:

#### § 431.19 Definitions.

\* \* \* \* \*

*Distribution transformer* means a transformer that:

(1) Has an input line voltage of 34.5 kV or less;

(2) Has an output line voltage of 600 V or less;

(3) Is rated for operation at a frequency of 60 Hz; and

(4) Has a capacity of 10 kVA to 5000 kVA for liquid-immersed units and 15 kVA to 5000 kVA for dry-type units; but

(5) The term “distribution transformer” does not include a transformer that is an –

- (i) Autotransformer;
- (ii) Drive (isolation) transformer;
- (iii) Grounding transformer;
- (iv) Machine-tool (control transformer);
- (v) Nonventilated transformer;
- (vi) Rectified transformer;
- (vii) Regulating transformer;
- (viii) Sealed transformer;
- (ix) Special-impedance transformer;
- (x) Testing transformer;
- (xi) Transformer with tap range of 20 percent or more;

(xii) Uninterruptible power supply transformer; or  
 (xiii) Welding transformer.  
*Drive (isolation) transformer* means a transformer that:  
 (1) Isolates an electric motor from the line;  
 (2) Accommodates the added loads of drive-created harmonics;  
 (3) Is designed to withstand the additional mechanical stressed resulting from an alternating current adjustable frequency motor drive or a direct current motor drive; and

(4) Has a rated output voltage that is neither “208Y/120” nor “480Y/277”.  
 \* \* \* \* \*  
*Nonventilated transformer* means a dry-type transformer constructed so as to prevent external air circulation through the coils of the transformer while operating at zero gauge pressure.  
 \* \* \* \* \*  
*Sealed transformer* means a dry-type transformer designed to remain hermetically sealed under specified condition of temperature and pressure.  
*Special-impedance transformer* means a transformer built to operate at

an impedance outside of the normal impedance range for that transformer’s kVA rating. The normal impedance range for each kVA rating for liquid-immersed and dry-type transformers is show in Tables 1 and 2, respectively. Distribution transformers with kVA ratings not appearing in the tables shall have their minimum normal impedance and maximum normal impedance determined by linear interpolation of the kVA and minimum and maximum impedances, respectively, of the values immediately above and below that kVA rating.

TABLE 1—NORMAL IMPEDANCE RANGES FOR LIQUID-IMMERSED TRANSFORMERS

Single-phase		Three-phase	
kVA	Impedance (%)	kVA	Impedance (%)
10	1.0–4.5	15	1.0–4.5
15	1.0–4.5	30	1.0–4.5
25	1.0–4.5	45	1.0–4.5
37.5	1.0–4.5	75	1.0–5.0
50	1.5–4.5	112.5	1.2–6.0
75	1.5–4.5	150	1.2–6.0
100	1.5–4.5	225	1.2–6.0
167	1.5–4.5	300	1.2–6.0
250	1.5–6.0	500	1.5–7.0
333	1.5–6.0	750	5.0–7.5
500	1.5–7.0	1,000	5.0–7.5
667	5.0–7.5	1,500	5.0–7.5
833	5.0–7.5	2,000	5.0–7.5
		2,500	5.0–7.5
		3,750	5.0–7.5
		5,000	5.0–7.5

TABLE 2—NORMAL IMPEDANCE RANGES FOR DRY-TYPE TRANSFORMERS

Single-phase		Three-phase	
kVA	Impedance (%)	kVA	Impedance (%)
15	1.5–6.0	15	1.5–6.0
25	1.5–6.0	30	1.5–6.0
37.5	1.5–6.0	45	1.5–6.0
50	1.5–6.0	75	1.5–6.0
75	2.0–7.0	112.5	1.5–6.0
100	2.0–7.0	150	1.5–6.0
167	2.5–8.0	225	3.0–7.0
250	3.5–8.0	300	3.0–7.0
333	3.5–8.0	500	4.5–8.0
500	3.5–8.0	750	5.0–8.0
667	5.0–8.0	1,000	5.0–8.0
833	5.0–8.0	1,500	5.0–8.0
		2,000	5.0–8.0
		2,500	5.0–8.0
		3,750	5.0–8.0
		5,000	5.0–8.0

*Submersible Distribution Transformer* means a liquid-immersed distribution transformer so constructed as to be successfully operable when submerged in water including the following features:

(1) Is rated for a temperature rise of 55°C;  
 (2) Has insulation rated for a temperature rise of 65°C;  
 (3) Has sealed-tank construction; and

(4) Has the tank, cover, and all external appurtenances made of corrosion-resistant material.  
 \* \* \* \* \*

*Transformer with tap range of 20 percent or more* means a transformer with multiple full-power voltage taps,

the highest of which equals at least 20 percent more than the lowest, computed based on the sum of the deviations of these taps from the transformer's maximum full-power voltage.

*Uninterruptible power supply transformer* means a transformer that is used within an uninterruptible power system, which in turn supplies power to loads that are sensitive to power failure, power sags, over voltage, switching transients, line notice, and other power quality factors. It does not include distribution transformers at the input,

output, or by-pass of an uninterruptible power system.

- \* \* \* \* \*
- 3. Amend § 431.196 by:
  - a. Revising paragraph (a)(2) and adding paragraph (a)(3),
  - b. Revising paragraph (b)(2) and adding paragraphs (b)(3) through (4), and
  - c. Revising paragraph (c)(2) and adding paragraph (c)(3).

The revisions and additions read as follows:

**§ 431.196 Energy conservation standards and their effective dates.**

(a) \* \* \*

(2) The efficiency of a low-voltage, dry-type distribution transformer manufactured on or after January 1, 2016, but before January 1, 2027, shall be no less than that required for the applicable kVA rating in the table below. Low-voltage dry-type distribution transformers with kVA ratings not appearing in the table shall have their minimum efficiency level determined by linear interpolation of the kVA and efficiency values immediately above and below that kVA rating.

Single-phase		Three-phase	
kVA		kVA	
15	97.70	15	97.89
25	98.00	30	98.23
37.5	98.20	45	98.40
50	98.30	75	98.60
75	98.50	112.5	98.74
100	98.60	150	98.83
167	98.70	225	98.94
250	98.80	300	99.02
333	98.90	500	99.14
		750	99.23
		1000	99.28

**Note:** All efficiency values are at 35 percent of nameplate-rated load, determined according to the DOE Test Method for Measuring the Energy Consumption of Distribution Transformers under appendix A to subpart K of 10 CFR part 431.

(3) The efficiency of a low-voltage dry-type distribution transformer manufactured on or after January 1, 2027, shall be no less than that required

for their kVA rating in the table below. Low-voltage dry-type distribution transformers with kVA ratings not appearing in the table shall have their

minimum efficiency level determined by linear interpolation of the kVA and efficiency values immediately above and below that kVA rating.

Single-phase		Three-phase	
kVA	Efficiency (%)	kVA	Efficiency (%)
15	98.84	15	98.72
25	98.99	30	98.93
37.5	99.09	45	99.03
50	99.14	75	99.16
75	99.24	112.5	99.24
100	99.30	150	99.29
167	99.35	225	99.36
250	99.40	300	99.41
333	99.45	500	99.48
		750	99.54
		1000	99.57

**Note:** All efficiency values are at 35 percent of nameplate-rated load, determined according to the DOE Test Method for Measuring the Energy Consumption of Distribution Transformers under appendix A to subpart K of 10 CFR part 431.

(b) \* \* \*  
 (2) The efficiency of a liquid-immersed distribution transformer, including submersible distribution transformers, manufactured on or after January 1, 2016, but before January 1,

2027, shall be no less than that required for their kVA rating in the table below. Liquid-immersed distribution transformers, including submersible distribution transformers, with kVA ratings not appearing in the table shall

have their minimum efficiency level determined by linear interpolation of the kVA and efficiency values immediately above and below that kVA rating.

Single-phase		Three-phase	
kVA	Efficiency (%)	kVA	Efficiency (%)
10	98.70	15	98.65
15	98.82	30	98.83
25	98.95	45	98.92
37.5	99.05	75	99.03
50	99.11	112.5	99.11
75	99.19	150	99.16
100	99.25	225	99.23
167	99.33	300	99.27
250	99.39	500	99.35
333	99.43	750	99.40
500	99.49	1,000	99.43
667	99.52	1,500	99.48
833	99.55	2,000	99.51
		2,500	99.53

**Note:** All efficiency values are at 50 percent of nameplate-rated load, determined according to the DOE Test-Procedure, appendix A to subpart K of 10 CFR part 431.

(3) The efficiency of a liquid-immersed distribution transformer, that is not a submersible distribution transformer, manufactured on or after January 1, 2027, shall be no less than that required for their kVA rating in the table below. Liquid-immersed distribution transformers with kVA ratings not appearing in the table shall have their minimum efficiency level determined by linear interpolation of the kVA and efficiency values immediately above and below that kVA rating.

Single-phase		Three-phase	
kVA	Efficiency (%)	kVA	Efficiency (%)
10	98.96	15	98.92
15	99.05	30	99.06
25	99.16	45	99.13
37.5	99.24	75	99.22
50	99.29	112.5	99.29
75	99.35	150	99.33
100	99.40	225	99.38
167	99.46	300	99.42
250	99.51	500	99.48
333	99.54	750	99.52
500	99.59	1,000	99.54
667	99.62	1,500	99.58
833	99.64	2,000	99.61
		2,500	99.62
		3,750	99.66
		5,000	99.68

**Note:** All efficiency values are at 50 percent of nameplate-rated load, determined according to the DOE Test Method for Measuring the Energy Consumption of Distribution Transformers under appendix A to subpart K of 10 CFR part 431.

(4) The efficiency of a submersible distribution transformer, manufactured on or after January 1, 2027, shall be no less than that required for their kVA rating in the table below. Submersible distribution transformers with kVA ratings not appearing in the table shall have their minimum efficiency level determined by linear interpolation of the kVA and efficiency values immediately above and below that kVA rating.

Single-phase		Three-phase	
kVA	Efficiency (%)	kVA	Efficiency (%)
10	98.70	15	98.65
15	98.82	30	98.83
25	98.95	45	98.92
37.5	99.05	75	99.03
50	99.11	112.5	99.11
75	99.19	150	99.16
100	99.25	225	99.23
167	99.33	300	99.27
250	99.39	500	99.35
333	99.43	750	99.40
500	99.49	1,000	99.43

Single-phase		Three-phase	
kVA	Efficiency (%)	kVA	Efficiency (%)
667 .....	99.52	1,500 .....	99.48
833 .....	99.55	2,000 .....	99.51
		2,500 .....	99.53

**Note:** All efficiency values are at 50 percent of nameplate-rated load, determined according to the DOE Test-Procedure appendix A to subpart K of 10 CFT part 431.

(c) \* \* \*  
 (2) The efficiency of a medium-voltage dry-type distribution transformer manufactured on or after January 1, 2016, but before January 1, 2027, shall be no less than that required for their kVA and BIL rating in the table below. Medium-voltage dry-type distribution transformers with kVA ratings not appearing in the table shall have their minimum efficiency level determined by linear interpolation of the kVA and efficiency values immediately above and below that kVA rating.

Single-phase				Three-phase			
kVA	BIL			kVA	BIL		
	20–45 kV	46–95 kV	≥96 kV		20–45 kV	46–95 kV	≥96 kV
	Efficiency (%)	Efficiency (%)	Efficiency (%)		Efficiency (%)	Efficiency (%)	Efficiency (%)
15 .....	98.10	97.86	.....	15 .....	97.50	97.18	.....
25 .....	98.33	98.12	.....	30 .....	97.90	97.63	.....
37.5 .....	98.49	98.30	.....	45 .....	98.10	97.86	.....
50 .....	98.60	98.42	.....	75 .....	98.33	98.13	.....
75 .....	98.73	98.57	98.53	112.5 .....	98.52	98.36	.....
100 .....	98.82	98.67	98.63	150 .....	98.65	98.51	.....
167 .....	98.96	98.83	98.80	225 .....	98.82	98.69	98.57
250 .....	99.07	98.95	98.91	300 .....	98.93	98.81	98.69
333 .....	99.14	99.03	98.99	500 .....	99.09	98.99	98.89
500 .....	99.22	99.12	99.09	750 .....	99.21	99.12	99.02
667 .....	99.27	99.18	99.15	1,000 .....	99.28	99.20	99.11
833 .....	99.31	99.23	99.20	1,500 .....	99.37	99.30	99.21
				2,000 .....	99.43	99.36	99.28
				2,500 .....	99.47	99.41	99.33

\* BIL means basic impulse insulation level  
**Note:** All efficiency values are at 50 percent of nameplate rated load, determined according to the DOE Test Method for Measuring the Energy Consumption of Distribution Transformers under appendix A to subpart K of 10 CFR part 431.

(3) The efficiency of a medium-voltage dry-type distribution transformer manufactured on or after January 1, 2027, shall be no less than that required for their kVA and BIL rating in the table below. Medium-voltage dry-type distribution transformers with kVA ratings not appearing in the table shall have their minimum efficiency level determined by linear interpolation of the kVA and efficiency values immediately above and below that kVA rating.

Single-phase				Three-phase			
kVA	BIL			kVA	BIL		
	20–45 kV	46–95 kV	≥96 kV		20–45 kV	46–95 kV	≥96 kV
	Efficiency (%)	Efficiency (%)	Efficiency (%)		Efficiency (%)	Efficiency (%)	Efficiency (%)
15 .....	98.29	98.07	.....	15 .....	97.74	97.45	.....
25 .....	98.49	98.30	.....	30 .....	98.11	97.86	.....
37.5 .....	98.64	98.47	.....	45 .....	98.29	98.07	.....
50 .....	98.74	98.58	.....	75 .....	98.49	98.31	.....
75 .....	98.86	98.71	98.68	112.5 .....	98.67	98.52	.....
100 .....	98.94	98.80	98.77	150 .....	98.78	98.66	.....
167 .....	99.06	98.95	98.92	225 .....	98.94	98.82	98.71
250 .....	99.16	99.05	99.02	300 .....	99.04	98.93	98.82
333 .....	99.23	99.13	99.09	500 .....	99.18	99.09	99.00
500 .....	99.30	99.21	99.18	750 .....	99.29	99.21	99.12
667 .....	99.34	99.26	99.23	1,000 .....	99.35	99.28	99.20
833 .....	99.38	99.31	99.28	1,500 .....	99.43	99.37	99.29
				2,000 .....	99.49	99.42	99.35
				2,500 .....	99.52	99.47	99.40

Single-phase				Three-phase			
kVA	BIL			kVA	BIL		
	20–45 kV	46–95 kV	≥96 kV		20–45 kV	46–95 kV	≥96 kV
	Efficiency (%)	Efficiency (%)	Efficiency (%)		Efficiency (%)	Efficiency (%)	Efficiency (%)
				3,750 .....	99.58	99.53	99.47
				5,000 .....	99.62	99.58	99.51

\* BIL means basic impulse insulation level

**Note:** All efficiency values are at 50 percent of nameplate rated load, determined according to the DOE Test Method for Measuring the Energy Consumption of Distribution Transformers under appendix A to subpart K of 10 CFR part 431.

\* \* \* \* \*

[FR Doc. 2022–28590 Filed 1–10–23; 8:45 am]

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## Part IV

### Department of Agriculture

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Office of the Secretary

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7 CFR Part 9

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Farm Service Agency

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7 CFR Parts 701 and 760

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Commodity Credit Corporation

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7 CFR Parts 1400, 1416, 1437, et. al.

Pandemic Assistance Programs and Agricultural Disaster Assistance Programs; Rule

**DEPARTMENT OF AGRICULTURE****Office of the Secretary****7 CFR Part 9****Farm Service Agency****7 CFR Parts 701 and 760****Commodity Credit Corporation****7 CFR Parts 1400, 1416, 1437, and 1450**

[Docket ID: USDA–2021–0012]

RIN 0503–AA75

**Pandemic Assistance Programs and Agricultural Disaster Assistance Programs**

**AGENCY:** Commodity Credit Corporation (CCC), Farm Service Agency (FSA), and Office of the Secretary, Department of Agriculture (USDA).

**ACTION:** Final rule.

**SUMMARY:** This rule announces Phase 2 of the Emergency Relief Program (ERP), which provides assistance to producers who suffered crop losses due to wildfires, hurricanes, floods, derechos, excessive heat, winter storms, freeze (including a polar vortex), smoke exposure, excessive moisture, and qualifying droughts occurring in calendar years 2020 and 2021. It also announces Pandemic Assistance Revenue Program (PARP), a new program that provides support for agricultural producers impacted by the COVID–19 pandemic. In addition, this rule makes changes to the Coronavirus Food Assistance Program (CFAP); the Emergency Conservation Program (ECP); the Emergency Forest Restoration Program (EFRP); the Emergency Assistance for Livestock, Honeybees, and Farm-Raised Fish Program (ELAP); the Livestock Forage Disaster Program (LFP); the Livestock Indemnity Program (LIP); the Noninsured Crop Disaster Assistance Program (NAP); and general payment eligibility provisions. This rule also makes a technical correction to the Biomass Crop Assistance Program (BCAP).

**DATES:**

*Effective date:* January 11, 2023.

*Comment due date:* For PARP, ECP, and ERP, we will consider comments on the information collection requirements under the Paperwork Reduction Act that we receive by March 13, 2023.

**ADDRESSES:** We invite you to submit comments on the information collection requirements. You may submit comments by any of the following methods:

- *Federal eRulemaking Portal:* Go to: [www.regulations.gov](http://www.regulations.gov) and search for docket ID USDA–2021–0012. Follow the online instructions for submitting comments.

- *Mail, Hand-Delivery, or Courier:* Director, Safety Net Division, FSA, USDA, 1400 Independence Avenue SW, Stop 0510, Washington, DC 20250–0522. In your comment, specify the docket ID USDA–2021–0012.

Comments will be available for inspection online at <http://www.regulations.gov>. Copies of the information collection may be requested by contacting Kathy Sayers or Shanita Landon, respectively (see **FOR FURTHER INFORMATION CONTACT** below). You may also send comments to the Desk Officer for Agriculture, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

**FOR FURTHER INFORMATION CONTACT:** For CFAP, ERP, ELAP, LFP, LIP, NAP, PARP, and PARP information collection activity, and payment eligibility, Kathy Sayers; telephone: (202) 720–6825; email: [kathy.sayers@usda.gov](mailto:kathy.sayers@usda.gov). For ECP, EFRP, and BCAP, Shanita Landon; telephone: (202) 690–1612; email: [shanita.landon@usda.gov](mailto:shanita.landon@usda.gov). Persons with disabilities who require alternative means for communication should contact the USDA Target Center at (202) 720–2600 (voice).

**SUPPLEMENTARY INFORMATION:****Background**

This rule announces ERP Phase 2 and PARP, a new program. In addition, this rule amends the CFAP regulations to provide an additional CFAP 2 payment for underserved producers;<sup>1</sup> makes clarifying changes based on previously implemented provisions of the Consolidated Appropriations Act, 2021 (CAA); and amends the payment provisions for producers of swine. It also updates provisions for and makes technical changes to the regulations for BCAP, ECP, ELAP, LFP, LIP, NAP, and payment eligibility provisions of 7 CFR part 1400, as described in this document.

**ERP Phase 2**

Division B, Title I, of the Extending Government Funding and Delivering Emergency Assistance Act (Pub. L. 117–43) provides \$10 billion for necessary expenses related to losses of crops (including milk, on-farm stored

<sup>1</sup> Throughout this document, the term “underserved farmer or rancher” refers to a beginning farmer or rancher, limited resource farmer or rancher, socially disadvantaged farmer or rancher, or veteran farmer or rancher.

commodities, crops prevented from planting in 2020 and 2021, and harvested adulterated wine grapes), trees, bushes, and vines, as a consequence of droughts, wildfires, hurricanes, floods, derechos, excessive heat, winter storms, freeze (including a polar vortex), smoke exposure, quality losses of crops, and excessive moisture occurring in calendar years 2020 and 2021. FSA previously announced ERP Phase 1 through a notice of funds availability on May 18, 2022 (87 FR 30164–30172),<sup>2</sup> which provided assistance for crop, tree, bush, and vine losses through a streamlined process with pre-filled applications using data already on file with FSA or the Risk Management Agency (RMA), as a result of the producer previously receiving a NAP payment or a crop insurance indemnity. This rule provides the eligibility requirements, application process, and payment calculations for ERP Phase 2, which is intended to address eligible crop losses not included in ERP Phase 1.<sup>3</sup> ERP Phase 2 provides assistance for necessary expenses related to both production and quality losses of eligible crops. Where loss information is not already on file with FSA or RMA through NAP or Federal crop insurance, and therefore included in ERP Phase 1, FSA has determined that the best approximation of such losses is a producer’s decrease in gross revenue, which will reflect losses in both production and quality without requiring the more extensive calculations and documentation required under previous programs addressing crop losses due to disaster events.<sup>4</sup> Using a decrease in gross revenue in the calculation of ERP Phase 2 payments also captures a producer’s loss due to a qualifying disaster event regardless of whether the loss occurs before harvest or after harvest while the

<sup>2</sup> A clarification to the notice of funds availability for ERP Phase 1 was published on August 18, 2022 (87 FR 50828–50830).

<sup>3</sup> Additional assistance authorized by the Extending Government Funding and Delivering Emergency Assistance Act for losses to milk and livestock will be announced in subsequent documents to be published in the **Federal Register**. FSA previously announced Phase 1 of the Emergency Livestock Relief Program (ELRP), which provided payments to producers who faced increased supplemental feed costs as a result of forage losses due to a qualifying drought or wildfire in calendar year 2021 on April 4, 2022 (87 FR 19465–19470).

<sup>4</sup> Assistance for crop losses that occurred prior to harvest due to disaster events in the 2018 and 2019 calendar years was provided through two separate programs: the Wildfires and Hurricanes Indemnity Program Plus (WHIP+) for production losses, and the Quality Loss Adjustment (QLA) Program for quality losses.

crop is in storage, further streamlining the delivery of assistance.

Decreases in gross revenue are strongly correlated to crop production and quality losses due to disaster events. Gross revenue is essentially the aggregation of the value of all of a producer's crops, and a decrease in gross revenue in a year when a producer suffered a loss due to a disaster event reflects the producer's crop losses resulting from decreased production or from obtaining a lower price due to a reduction in quality for that year. Previous FSA disaster assistance programs have similarly been based on a producer's loss of value compared to their expected value, using payment calculations based on crop acres, price, and yield (or inventory and price for value loss crops) as a way to estimate the value of a crop. While ERP Phase 2 uses a different calculation than previous disaster assistance programs to capture that value loss, it accounts for crop losses in a streamlined way that minimizes the burden on producers and improves efficiency of application processing by FSA county offices.

#### ERP Phase 2 Eligibility

To be eligible for ERP Phase 2, a producer must have suffered a loss of an eligible crop due in whole or in part to a qualifying disaster event that occurred in the 2020 or 2021 calendar year (referred to as the "disaster year"). Qualifying disaster events include wildfires, hurricanes, floods, derechos, excessive heat, winter storms, freeze (including a polar vortex), smoke exposure, excessive moisture, qualifying drought, and related conditions occurring in calendar years 2020 and 2021. "Qualifying drought" means an area within the county was rated by the U.S. Drought Monitor as having a drought intensity of D2 (severe drought) for 8 consecutive weeks or D3 (extreme drought) or higher level for any period of time during the applicable calendar year.

To receive a payment for ERP Phase 2, the eligible crop loss must have resulted in a decrease of allowable gross revenue, as described in the next section of this document. "Eligible crop" for ERP Phase 2 means a crop, including eligible aquaculture, that is produced in the United States as part of a farming operation and is intended to be commercially marketed. It excludes crops for grazing, aquatic species that do not meet the definition of aquaculture, *Cannabis sativa L.* and any part of that plant that does not meet the definition of hemp, and timber.

For ERP, "producer" refers to a person or legal entity who was entitled

to a share in the eligible crop available for marketing or would have shared had the eligible crop been produced and marketed. In addition, to be eligible for ERP Phase 2, a producer must be one of the following:

- (1) Citizen of the United States;
- (2) Resident alien, which for purposes of this subpart means "lawful alien" as defined in 7 CFR part 1400;
- (3) Partnership organized under State Law;
- (4) Corporation, limited liability company, or other organizational structure organized under State law; or
- (5) Indian Tribe or Tribal organization, as defined in section 4(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304).

#### ERP Phase 2 Allowable Gross Revenue

In general, ERP Phase 2 payments are based on the difference in allowable gross revenue between a benchmark year (2018 or 2019), reflective of a typical year, as elected by the producer, intended to represent a typical year of revenue for the producer's operation, and the applicable disaster year (2020 or 2021). For the purposes of ERP Phase 2, "allowable gross revenue" includes revenue from:

- Sales of eligible crops produced by the producer, which includes sales resulting from value added through post-production activities (for example, sales of jam from the processing of strawberries) that were reportable on IRS Schedule F;
- Sales of eligible crops a producer purchased for resale that had a change in characteristic due to the time held (for example, a plant purchased at a size of 2 inches and sold as an 18-inch plant after 4 months), less the cost or other basis of such eligible crops;
- The taxable amount of cooperative distributions directly related to the sale of the eligible crops produced by the producer;
- Benefits under the following agricultural programs: 2017 Wildfires and Hurricanes Indemnity Program (WHIP), Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC), Biomass Crop Assistance Program (BCAP), Loan Deficiency Payment (LDP) program, marketing loan gains (MLG) under the Marketing Assistance Loan (MAL) program, 2018 and 2019 Market Facilitation Programs (MFP), Seafood Trade Relief Program (STRP), and the On-Farm Storage Loss Program;
- CCC loans, if treated as income and reported to IRS;
- Crop insurance proceeds, minus the amount of administrative fees and premiums;

- NAP payments, minus the amount of service fees and premiums;
- ELAP payments for an aquaculture crop;
- Payments issued through grant agreements with FSA for losses of eligible crops;
- Grants from the Department of Commerce, National Oceanic and Atmospheric Administration, and State program funds providing direct payments for the loss of eligible crops or the loss of revenue from eligible crops;
- Other revenue directly related to the production of eligible crops that IRS requires the producer to report as income;
- For the applicable disaster year only, ERP Phase 1 payments issued to another person or entity for the producer's share of an eligible crop, regardless of the tax year in which the payment would be reported to IRS;<sup>5</sup> and
- For the benchmark year only, 2018, 2019 and 2020 WHIP+ and QLA payments.

The allowable gross revenue will be based on the year for which the revenue would be reported for the purpose of filing a tax return. Producers who file or would be eligible to file a joint tax return will certify their allowable gross revenue based on what it would have been had they filed taxes separately for the applicable year.

If a producer decreased their operation capacity in a disaster year, as compared to the benchmark year, the producer must certify to an adjusted benchmark revenue on form FSA-521 that represents the producer's reasonably expected allowable gross revenue for the disaster year prior to the impact of the qualifying disaster event. A producer may also certify to an adjusted benchmark revenue on form FSA-521 if the producer did not have a full year of benchmark allowable gross revenue or expanded their operation capacity in a disaster year, compared to their benchmark year. If requested by FSA, producers are required to submit documentation to support these adjustments within 30 calendar days of the request. The documentation to support an adjustment due to a change in operation capacity must show that

<sup>5</sup> ERP Phase 1 allowed producers who received pre-filled application forms to indicate shares in the crop. In some cases, payment for a producer's share of a crop may have been issued to a different person or entity than the producer applying for a related revenue loss under ERP Phase 2. Applications for ERP Phase 2 must include any ERP Phase 1 payments issued to another person or entity for the producer's share of an eligible crop in order to prevent duplicate benefits being issued for the same loss.

the adjustment to the producer's benchmark revenue is due to an:

- Addition or decrease in production capacity of the farming operation;
- Increase or decrease in the use of existing production capacity; or
- Physical alterations that were made to existing production capacity.

Change in production capacity does not include crop rotation from year to year, changes in farming practices such as converting from conventional tillage to no-till, or increasing the rate of fertilizers or chemicals.

If a producer began farming in 2020 or 2021 and did not have allowable gross revenue in a benchmark year, the producer may certify to an adjusted benchmark allowable gross revenue on form FSA-521 that represents what had been the producer's reasonably expected disaster year revenue prior to the impact of the qualifying disaster event. If requested by FSA, documentation required to support a producer's certification must be provided within 30 calendar days of FSA's request, or the producer will be considered ineligible for ERP Phase 2. Acceptable documentation must be generated in the ordinary course of business and dated prior to the impact of the disaster event and includes, but is not limited to:

- Financial documents such as a business plan or cash flow statement that demonstrate an expected level of revenue;
- Sales contracts or purchase agreements; and
- Documentation supporting production capacity, use of existing production capacity, or physical alterations that demonstrate production capacity.

FSA is providing an optional form, FSA-521A, Continuation Sheet for Emergency Relief Program (ERP) Adjusted Revenue, to help producers calculate their adjusted benchmark revenue if they are certifying to an adjustment on FSA-521.

In addition to providing their allowable gross revenue for the benchmark and disaster years, producers will certify to the percentage of their expected allowable gross revenue from specialty and high value crops and the percentage from other crops for the applicable disaster year on their application form. This information is used in the payment calculation to determine the amount applied to the separate payment limitations for specialty and high value crops and for all other crops, as described later in this document. The percentages certified must be equal to the percentages that the producer would have reasonably expected for the disaster year if the

qualifying disaster event had not occurred. For ERP Phase 2 purposes, "specialty crop" has the same meaning as in ERP Phase 1.<sup>6</sup> A crop may be considered a high value crop based on either the crop itself, or how the crop is marketed. High value crop includes any eligible crop not specifically identified as a specialty crop or listed in the definition of "other crop" (that is, cotton, peanuts, rice, feedstock, and any crop grown with an intended use of grain, silage, or forage), and it also includes any eligible crop, regardless of whether the crop is identified as a specialty crop or listed in the definition of "other crop," if the crop is a direct market crop, organic crop, or a crop grown for a specific market in which specialized products can be sold resulting in an increased value compared to the typical market for the crops (for example, soybeans intended for tofu production), as determined by the Deputy Administrator for Farm Programs (Deputy Administrator).

#### Applying for ERP Phase 2

A completed FSA-521, Emergency Relief Program (ERP) Phase 2 Application, must be submitted to any FSA county office by the close of business on the date announced by the Deputy Administrator. Applications may be submitted in person or by mail, email, facsimile, or other methods announced by FSA.

Producers must also submit the following forms if not already on file with FSA within 60 days of the ERP Phase 2 application deadline:

- (1) Form AD-2047, Customer Data Worksheet, for new customers or existing customers who need to update their customer profile;
- (2) Form FSA-521A, Continuation Sheet for Emergency Relief Program (ERP) Adjusted Revenue, if applicable;
- (3) Form CCC-860, Socially Disadvantaged, Limited Resource, Beginning and Veteran Farmer or Rancher Certification, applicable for the program year or years for which the producer is applying for ERP;<sup>7</sup>

<sup>6</sup> As defined for ERP Phase 1, "specialty crops" means fruits, tree nuts, vegetables, culinary herbs and spices, medicinal plants, and nursery, floriculture, and horticulture crops. This includes common specialty crops identified by USDA's Agricultural Marketing Service at <https://www.ams.usda.gov/services/grants/scbgp/specialty-crop> and other crops as designated by the Deputy Administrator for Farm Programs.

<sup>7</sup> An individual who has filed CCC-860 certifying their status as a socially disadvantaged, beginning, or veteran farmer or rancher for a prior program year is not required to submit a subsequent CCC-860 certifying their status for a later program year because an individual's status as socially disadvantaged would not change in different years, and their certification as a beginning or veteran

(4) Form CCC-901, Member Information for Legal Entities, if applicable;

(5) Form CCC-902, Farm Operating Plan for an individual or legal entity as provided in 7 CFR part 1400;

(6) Form FSA-510, Request for an Exception to the \$125,000 Payment Limitation for Certain Programs, accompanied by a certification from a certified public accountant or attorney as to that person or legal entity's certification, for a legal entity and all members of that entity, for each applicable program year, including the legal entity's members, partners, or shareholders, as provided in 7 CFR part 1400; and

(7) Form AD-1026, Highly Erodible Land Conservation (HELC) and Wetland Conservation (WC) Certification, for the ERP Phase 2 applicant and applicable affiliates as provided in 7 CFR part 12.

If requested by FSA, the producer must provide additional documentation that establishes the producer's eligibility for ERP Phase 2. If supporting documentation is requested, the documentation must be submitted to FSA within 30 calendar days from the request or the application will be disapproved by FSA. FSA may request supporting documentation to verify information provided by the producer and the producer's eligibility including, but not limited to, the producer's:

- (1) Allowable gross revenue as reported on the ERP Phase 2 application;
- (2) Percentages of the expected allowable gross revenue from specialty and high value crops and other crops; and
- (3) Ownership share in the agricultural commodities.

#### ERP Phase 2 Payment Calculation

Although producers will be able to apply for both the 2020 and 2021 disaster years, as applicable, on one form, ERP Phase 2 payments will be calculated separately for each disaster year. If a producer indicates that they have expected revenue for both specialty and high value crops and other crops for a disaster year, a payment will be calculated separately for specialty

farmer or rancher includes the relevant date needed to determine for what program years the status would apply. An entity that has filed CCC-860 certifying its status as a socially disadvantaged, beginning, or veteran farmer or rancher for a prior program year is not required to submit a subsequent certification of its status for a later program year unless the entity's status has changed due to changes in membership. Because a producer's status as a limited resource farmer or rancher may change annually depending on the producer's direct and indirect gross farm sales, those producers must submit CCC-860 for each applicable program year.

and high value crops and other crops for a disaster year.

To determine a producer's ERP Phase 2 payment amount, FSA will calculate:

(1) The ERP factor of 70 percent<sup>8</sup> multiplied by the producer's benchmark year allowable gross revenue, adjusted according to 7 CFR 760.1903, if applicable, minus

(2) The producer's disaster year allowable gross revenue; minus

(3) The sum of the producer's net ERP Phase 1 payments for the 2020 program year, if the calculation is for the 2020 disaster year, or for the 2021 and 2022<sup>9</sup> program years, if the calculation is for the 2021 disaster year; minus

(4) The sum of the producer's net CFAP payments (excluding payments for contract producer revenue), net 2020 WHIP+ payments, and net 2020 Quality Loss Adjustment (QLA) Program payments, if the calculation is for the 2020 disaster year; and

(5) Multiplied by the percentage of the expected disaster year revenue for specialty and high value crops or other crops, as applicable.

ERP Phase 2 payments are subject to the availability of funds. FSA will issue an initial payment equal to the lesser of:

- The amount calculated as described above; or

- A maximum initial payment of \$2,000.

If a producer has also received a payment under ERP Phase 1, FSA will reduce the producer's initial ERP Phase 2 payment amount by subtracting their ERP Phase 1 gross payment amount.<sup>10</sup> If total calculated payments exceed the total funding available for ERP Phase 2, the ERP Factor may be adjusted and the final payment amounts will be prorated to stay within the amount of available funding. If there are insufficient funds, a differential of 15 percent will be used for underserved producers similar to ERP Phase 1, but with a cap at the statutory maximum of 70 percent.<sup>11</sup> For

example, if the ERP Factor is set at 50 percent, the factor used for underserved producers will be 65 percent, but if the factor is set at 55 percent or higher, the factor for underserved producers will be capped at 70 percent. An initial payment to a producer will not be recalculated or reduced if the total calculated ERP Phase 2 factored payment for that producer is less than the initial payment amount.

If a producer receives additional assistance through CFAP or ERP Phase 1 after a producer's ERP Phase 2 payment is calculated, the producer's ERP Phase 2 payment will be recalculated and the producer must refund any resulting overpayment.

#### ERP Phase 2 Payment Limitation and Attribution

As required by the Extending Government Funding and Delivering Emergency Assistance Act and consistent with 7 CFR 760.1507, the payment limitation for ERP is determined by the producer's average adjusted gross farm income (income from activities related to farming, ranching, or forestry). Specifically, if the producer's average adjusted gross farm income is less than 75 percent of the producer's average adjusted gross income (AGI) for the 3 taxable years preceding the most immediately preceding complete tax year, a producer, other than a joint venture or general partnership, cannot receive, directly or indirectly, more than \$125,000 in payments for specialty crops and high value crops<sup>12</sup> and \$125,000 in payment for all other crops under:

(1) ERP Phase 1 for program year 2020 and ERP Phase 2 for program year 2020, combined; and

(2) ERP Phase 1 for program years 2021 and 2022<sup>13</sup> and ERP Phase 2 for program year 2021, combined.

ranchers (or specific groups included in that term) in several programs, such as ECP, ELAP, and the Tree Assistance Program. FSA has also used higher payment factors for these producers in several recently announced programs: the Food Safety Certification for Specialty Crops Program, the Organic and Transitional Education and Certification Program, ELRP Phase 1, and ERP Phase 1. In addition, NAP provides a reduced service fee and premium for underserved farmers and ranchers. This approach supports the equitable administration of FSA programs, as underserved farmers and ranchers are more likely to lack financial reserves and access to capital that would allow them to cope with losses due to unexpected events outside of their control.

<sup>12</sup> High value crops were not defined in ERP Phase 1; therefore, only ERP Phase 1 payments to specialty crops, as defined in the ERP Phase 1 notice, will be counted toward the increased payment limitation for specialty and high value crops.

<sup>13</sup> For ERP Phase 1, the program year was based on the crop year, as defined in the applicable crop

If at least 75 percent of the producer's average AGI is derived from farming, ranching, or forestry related activities and the producer provides the required certification and documentation, as discussed below, the producer, other than a joint venture or general partnership, is eligible to receive, directly or indirectly, up to:

(1) \$900,000 for specialty crops and high value crops combined for:

(i) ERP Phase 1 for program year 2020 and ERP Phase 2 for program year 2020, combined; and

(ii) ERP Phase 1 for program years 2021 and 2022 and ERP Phase 2 for program year 2021, combined; and

(2) \$250,000 for all other crops for:

(i) ERP Phase 1 for program year 2020 and ERP Phase 2 for program year 2020, combined; and

(ii) ERP Phase 1 for program years 2021 and 2022 and ERP Phase 2 for program year 2021, combined.

The relevant tax years for establishing a producer's AGI and percentage derived from farming, ranching, or forestry related activities are:

(1) 2016, 2017, and 2018 for program year 2020; and

(2) 2017, 2018, and 2019 for program year 2021.

To receive more than \$125,000 in ERP payments, producers must submit form FSA-510, accompanied by a certification from a certified public accountant or attorney as to that person or legal entity's certified AGI. If a producer requesting the increased payment limitation is a legal entity, all members of that entity must also complete form FSA-510 and provide the required certification according to the direct attribution provisions in 7 CFR 1400.105, "Attribution of Payments." If a legal entity would be eligible for the increased payment limitation based on the legal entity's average AGI derived from farming, ranching, or forestry related activities but a member of that legal entity either does not complete a form FSA-510 and provide the required certification or is not eligible for the increased payment limitation, the payment to the legal entity will be reduced for the limitation applicable to the share of the ERP Phase 2 payment attributed to that member.

If a producer files form FSA-510 and the accompanying certification after their ERP Phase 2 payment is issued but

insurance policy or NAP provisions, and 2022 was included because a qualifying disaster event occurring in the 2021 calendar year may have caused a loss of a crop during the 2022 crop year. The program year for ERP Phase 2 is based on the disaster year (2020 or 2021) because the payment is based on a producer's allowable gross revenue, which may include revenue from multiple crops.

<sup>8</sup> The Extending Government Funding and Delivering Emergency Assistance Act provides that the total amount of payments cannot exceed 70 percent of the loss for producers who did not obtain federal crop insurance or NAP coverage for the crop incurring the losses.

<sup>9</sup> For ERP Phase 1, the program year was based on the crop year, as defined in the applicable crop insurance policy or NAP provisions, and 2022 was included because a qualifying disaster event occurring in the 2021 calendar year may have caused a loss of a crop during the 2022 crop year. The program year for ERP Phase 2 is based on the disaster year (2020 or 2021) because the payment is based on a producer's allowable gross revenue, which may include revenue from multiple crops.

<sup>10</sup> If the producer's ERP Phase 1 payment is equal to or exceeds the producer's initial ERP Phase 2 payment amount, the producer will not receive an initial ERP Phase 2 payment.

<sup>11</sup> FSA calculates payments based on a higher payment factor for underserved farmers and

before the deadline announced by FSA, FSA will process the form FSA-510 and issue the additional payment amount if a maximum initial payment amount has not been reached.

A payment made to a legal entity will be attributed to those members who have a direct or indirect ownership interest in the legal entity, unless the payment of the legal entity has been reduced by the proportionate ownership interest of the member due to that member's ineligibility. Attribution of payments made to legal entities will be tracked through four levels of ownership in legal entities as described in § 760.1906.

Like other programs administered by FSA, payments made to an Indian Tribe or Tribal organization, as defined in section 4(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304), will not be subject to payment limitation.

#### ERP Phase 2 Miscellaneous Provisions

If an ERP Phase 2 payment resulted from erroneous information provided by a producer, or any person acting on their behalf, the payment will be recalculated and the producer must refund any excess payment with interest calculated from the date of the disbursement of the payment. If FSA determines that the producer intentionally misrepresented information provided on the producer's application, the application will be disapproved and the producer must refund the full amount of any payments to FSA with interest from the date of disbursement.

#### ERP Phase 2 Requirement To Purchase Crop Insurance or NAP Coverage

All producers who receive ERP Phase 2 payments are statutorily required to purchase federal crop insurance, or NAP coverage where crop insurance is not available, for the next 2 available crop years (Pub. L. 117-43, 135 STAT. 357) as described in this section and as determined by the Secretary. To identify which crops suffered losses that resulted in a revenue loss due to a qualifying disaster event, producers must complete form FSA-522, Crop Insurance and/or NAP Coverage Agreement. For each of those crops, a producer must file an acreage report and obtain federal crop insurance or NAP, as may be applicable:

- (1) At a coverage level equal to or greater than 60 percent for insurable crops; or
- (2) At the catastrophic level or higher for NAP crops.

The timing for the requirement to purchase federal crop insurance or NAP

for the next 2 available crop years will be determined from the date a producer receives an ERP payment and may vary depending on the timing and availability of crop insurance or NAP for a producer's particular crops. The final crop year to purchase crop insurance or NAP coverage to meet the second year of coverage for this requirement is the 2026 crop year.

In situations where federal crop insurance is unavailable for a crop, a producer must obtain NAP coverage. Section 1001D of the Food Security Act of 1985 (1985 Farm Bill) provides that a person or entity with an AGI greater than \$900,000 is not eligible to participate in NAP; however, producers with an AGI greater than \$900,000 are eligible for ERP. To reconcile this restriction in the 1985 Farm Bill and the requirement to obtain NAP or crop insurance coverage, a producer may meet the purchase requirement by purchasing Whole-Farm Revenue Protection (WFRP) crop insurance coverage, if eligible, or they may pay the applicable NAP service fee despite their ineligibility for a NAP payment. In other words, the service fee must be paid even though no NAP payment may be made because the AGI of the person or entity exceeds the 1985 Farm Bill limitation.

If both federal crop insurance and NAP coverage are unavailable for a crop, the producer must obtain WFRP crop insurance coverage, if eligible.

For all crops listed on form FSA-522, any producer who has the crop or crop acreage in subsequent years and who fails to obtain the 2 years of crop insurance or NAP coverage required as specified in this document, must refund the full amount of any ERP Phase 2 payments with interest from the date of disbursement. Any producer who does not plant a crop listed on form FSA-522 in a year for which this requirement applies is not subject to the crop insurance or NAP purchase requirement for the crop for that year.

Producers who received an ERP Phase 1 payment for a crop are not required to obtain additional years of crop insurance or NAP coverage for that crop, to the extent the producer is already complying with the requirement in connection with an ERP Phase 1 payment, if they also receive an ERP Phase 2 payment for a loss associated with that crop.

#### PARP

Secretary Tom Vilsack announced the USDA Pandemic Assistance for Producers initiative on March 24, 2021. Through that initiative, USDA is reaching a broader set of producers than in previous COVID-19 assistance

programs, with a specific focus on strengthening outreach to underserved producers and communities and small and medium agricultural operations. PARP, a new program administered by FSA, is part of that initiative.

PARP will use funding authorized by the Consolidated Appropriations Act, 2021 (CAA; Pub. L. 116-260), which provides funding to prevent, prepare for, and respond to the COVID-19 pandemic by providing support for agricultural producers, growers, and processors impacted by coronavirus. This rule establishes PARP to respond to the COVID-19 pandemic by providing support for eligible producers of agricultural commodities who suffered an eligible revenue loss in calendar year 2020 due to the COVID-19 pandemic. PARP is intended to provide assistance to a wide variety of agricultural producers, including those who produced agricultural commodities that were not eligible for CFAP 1 and 2 (7 CFR part 9).

For PARP, "producer" refers to a person or legal entity (including a general partnership or joint venture) who was in the business of farming to produce an agricultural commodity in calendar year 2020, and who was entitled to a share in the agricultural commodity available for marketing or would have shared had the agricultural commodity been produced and marketed. "Producer" also includes cattle feeder operations, which were not eligible for CFAP 1 and CFAP 2. To be eligible for PARP, a producer must:

- Have been in the business of farming during at least part of the 2020 calendar year; and
- Have had at least a 15 percent decrease in "allowable gross revenue"<sup>14</sup> for the 2020 calendar year, as compared to:
  - The 2018 or 2019 calendar year (similar to the benchmark year for ERP Phase 2), reflective of a typical year, as elected by the producer, if they received allowable gross revenue during the 2018 or 2019 calendar years; or
  - The producer's expected 2020 allowable gross revenue, if the producer had no allowable gross revenue in 2018 and 2019.<sup>15</sup>

In addition, to be eligible for PARP, a producer must be one of the following:

<sup>14</sup> "Allowable gross revenue" is explained later in this section of this document.

<sup>15</sup> PARP provides assistance to participants whose allowable gross revenue for the 2020 calendar year was at or below 85 percent of the "benchmark" allowable gross revenue. This uses the same maximum level of coverage available under RMA's Whole Farm Revenue Program (WFRP), coverage that requires 15 percent or more decrease in revenue to trigger a payment.

- A citizen of the United States;
- A resident alien, which for purposes of this subpart means “lawful alien” as defined in 7 CFR part 1400;
- A partnership organized under State Law;
- A corporation, limited liability company, or other organizational structure organized under State law;
- An Indian Tribe or Tribal organization, as defined in section 4(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304); or
- A foreign person or foreign entity who meets all requirements as described in 7 CFR part 1400.

For PARP, “agricultural commodity” means a crop, aquaculture, livestock, livestock byproduct, or other animal or animal byproduct that is produced as part of a farming operation and is intended to be commercially marketed. It includes only commodities produced in the United States, and commodities produced outside the United States by a producer located in the United States and marketed inside the United States. It excludes:

- Wild free-roaming animals;
- Horses and other animals used or intended to be used for racing or wagering;
- Aquatic species that do not meet the definition of aquaculture;
- *Cannabis sativa L.* and any part of that plant that does not meet the definition of hemp; and
- Timber.

As provided in § 9.304, allowable gross revenue for PARP includes revenue from:

- Sales of agricultural commodities produced by the producer, including the sales resulting from value added through post-production activities (for example, sales of jam from the processing of strawberries);
- Sales of agricultural commodities a producer purchased for resale, less the cost or other basis of such commodities;
- The taxable amount of cooperative distributions directly related to the sale of the agricultural commodities produced by the producer;
- Benefits under certain federal agricultural programs and disaster programs (excluding conservation programs, CFAP 1 and 2, 2020 program year ERP, the Pandemic Livestock Indemnity Program (PLIP), and the Spot Market Hog Pandemic Program (SMHPP));
- CCC loans, if treated as income and reported to IRS;
- Crop insurance proceeds;
- Payments issued through grant agreements with FSA for losses of agricultural commodities;

- Grants from the Department of Commerce, National Oceanic and Atmospheric Administration and State program funds providing direct payments for the loss of agricultural commodities or the loss of revenue from agricultural commodities;
- Revenue from raised breeding livestock;
- Revenue earned as a cattle feeder operation;
- Other revenue directly related to the production of agricultural commodities that IRS requires the producer to report as income; and
- For 2020 allowable gross revenue, payments under the Pandemic Market Volatility Assistance Program regardless of the calendar year in which the payment was received.

An optional worksheet is available to assist producer’s in computing their revenue from the sources listed above. Producers who file or would be eligible to file a joint tax return will certify their revenue based on what their revenue would have been had they filed taxes separately for the applicable year. Revenue earned as a contract producer of an agricultural commodity is not included in allowable revenue for PARP.

If a producer did not have a full year of revenue for 2018 or 2019 or physically expanded their operation in 2020, the producer may certify to an adjusted 2018 or 2019 allowable gross revenue on form FSA–1122A. Producers must provide documentation to support the adjusted amount within 30 calendar days of submitting their PARP application. The documentation must show that the producer added production capacity to the farming operation, increased the use of existing production capacity, or made physical alterations to existing production capacity that would have resulted in increased revenue in 2020. Increases in production capacity do not include crop rotation from year to year, changes in farming practices such as converting from conventional tillage to no-till, or increasing the rate of fertilizers or chemicals.

If a producer did not have allowable gross revenue in 2018 and 2019 but was in the business of farming in 2020, the producer must certify on form FSA–1122A as to what had been their reasonably expected 2020 allowable gross revenue prior to the impact of the COVID–19 pandemic. Producers must provide documentation to support their expected 2020 allowable gross revenue within 30 days of submitting their PARP application. Acceptable documentation must be generated in the ordinary course of business and dated prior to the

impact of the COVID–19 pandemic and includes, but is not limited to, financial documents such as a business plan or cash flow statement that demonstrates an expected level of revenue; sales contracts or purchase agreements; and documentation supporting production capacity, use of existing production capacity, or physical alterations that demonstrate production capacity.

### PARP Application Process

FSA will accept PARP applications until the date announced by the Deputy Administrator. To apply for PARP, producers must submit a complete FSA–1122, Pandemic Assistance Revenue Program Application, in person, by mail, email, facsimile, or other method announced by FSA to any FSA county office.<sup>16</sup> Applicants must also submit all of the following items, if not previously filed with FSA:

- Form AD–2047, Customer Data Worksheet, for new customers or existing customers who need to update their customer profile;
- Form CCC–860, Socially Disadvantaged, Limited Resource, Beginning and Veteran Farmer or Rancher Certification, applicable for the 2020 program year, if the applicant is an underserved farmer or rancher;<sup>17</sup>
- Form CCC–901, Member Information for Legal Entities, if applicable;
- Form CCC–902, Farm Operating Plan for an individual or legal entity as provided in 7 CFR part 1400;
- Form CCC–941, Average Adjusted Gross Income (AGI) Certification and Consent to Disclosure of Tax Information, for the 2020 program year for the producer, including the legal entity’s members, partners, shareholders, heirs, or beneficiaries as provided in 7 CFR part 1400;
- Form FSA–1123, Certification of 2020 Adjusted Gross Income, if applicable;
- Form FSA–1122A, Pandemic Assistance Revenue Program (PARP) Application, if applicable;
- Form AD–1026, Highly Erodible Land Conservation (HELC) and Wetland Conservation (WC) Certification, for the

<sup>16</sup> The FSA county office locator can be found through the “Find Your Local Service Center” section on: <https://www.farmers.gov/>.

<sup>17</sup> For PARP, socially disadvantaged groups include the following: American Indians or Alaskan Natives, Asians or Asian-Americans, Blacks or African Americans, Hispanics or Hispanic Americans, Native Hawaiians or other Pacific Islanders, and women. Form CCC–860 is not required for underserved farmers and ranchers to receive a payment; however, failure to submit form CCC–860 will result in a producer’s payment being calculated using a lower payment factor. Also, see footnote 7.

PARP applicant and applicable affiliates as provided in 7 CFR part 12.

The required eligibility forms specified above must be submitted no later than 60 days from the PARP application deadline. When the producer does not timely submit the required eligibility forms, or when a member of a legal entity who is required to submit AD-1026 has not done so, FSA will not issue a payment to the producer. When any other required eligibility forms are not timely submitted for a member of a legal entity, FSA will reduce the payment based on that member's ownership share of the legal entity.

In addition, producers must provide documentation within 30 calendar days of submitting the FSA-1122, if applicable, to verify:

- The producer's certified expected 2020 allowable gross revenue; and
- The physical expansion of a producer's operation in 2020.

If requested by FSA, the producer must provide additional documentation that establishes the producer's eligibility for PARP. If any supporting documentation is requested, the documentation must be submitted to FSA within 30 days from the request or the application will be disapproved by FSA.

#### PARP Payment Calculation

The PARP payment calculation is based on the difference in a producer's revenue compared to a prior "benchmark" year. Producers who had allowable gross revenue in 2018 or 2019 will elect which of those years is most reflective of a typical year to use as a benchmark for the purposes of calculating a PARP payment. FSA will determine the result of the producer's 2018 or 2019 allowable gross revenue, minus the producer's 2020 allowable gross revenue, multiplied by a payment factor. The adjusted 2018 or 2019 allowable gross revenue, as described above, will be used for producers who did not have a full year of revenue for 2019 or increased their operation size in 2020. The payment factor will be 90 percent for underserved farmers and ranchers who have filed CCC-860 certifying their status for the 2020 program year.<sup>18</sup> The payment rate for all other producers will be 80 percent. The PARP payment will be equal to the result of that calculation minus any 2020 program year ERP payments and pandemic assistance received by the producer under CFAP 1 and 2 (not including any CFAP 2 payments for contract producer revenue), PLIP, and

SMHPP. If a producer receives assistance through any of those programs after their PARP payment is calculated, their PARP payment will be recalculated and the producer must refund any resulting overpayment to FSA.

If a producer was in the business of farming in 2020 but did not have allowable gross revenue in 2018 and 2019, then the payment calculation will be equal to the producer's expected 2020 allowable gross revenue minus the producer's actual 2020 allowable gross revenue, multiplied by a payment factor of 90 percent for underserved farmers and ranchers who have filed the form CCC-860, or 80 percent for all other producers. As described above, the PARP payment will be equal to the result of that calculation minus any assistance received by the producer under CFAP 1 and 2 (not including any CFAP 2 payments for contract producer revenue), 2020 program year ERP, PLIP, and SMHPP, and the PARP payment will be recalculated if the producer receives additional payments under those programs. Those producers must provide documentation to support their certification of their expected 2020 allowable gross revenue within 30 days of submitting their PARP application or they will be ineligible for payment.

PARP payments will be issued after the application period ends. PARP payments are subject to the availability of funds and may be factored if total calculated payments exceed the available funding. PARP payments are not subject to offset.

#### PARP Payment Limitation, Average AGI Limitation, and Attribution

PARP payments are subject to a per person or legal entity payment limitation of \$125,000. USDA may establish a lower maximum payment amount per person, legal entity, or member of a joint venture or general partnership after the application period has ended if calculated payment amounts exceed available funding. Similar to the manner in which payment limitations are applied in the major commodity and disaster assistance programs administered by FSA, payments will be attributed to an individual through the direct attribution process used in those programs. The total payment amount of PARP payments attributed to an individual will be determined by taking into account the direct and indirect ownership interests of the individual in all legal entities participating in PARP.

A producer, other than a joint venture or general partnership, is ineligible for payments if the producer's average AGI,

using the average of the adjusted gross incomes for the 2016, 2017, and 2018 tax years, is more than \$900,000, unless the producer's AGI for 2020 is \$900,000 or less. To be eligible for payment, a producer whose average AGI for 2016, 2017, and 2018 exceeds \$900,000 but whose 2020 AGI is \$900,000 or less must submit form FSA-1123 and provide a certification from a licensed CPA or attorney affirming the producer's 2020 AGI is not more than \$900,000. With respect to joint ventures and general partnerships, this AGI provision will be applied to each member of the joint venture and general partnership.

To be eligible for payment and facilitate administration of payment limitation, payment attribution, AGI, and rules applicable to foreign persons, producers that are a legal entity must provide the names, addresses, valid taxpayer identification numbers, and ownership share of each person or each legal entity that holds or acquires a direct or indirect ownership interest in the legal entity. Payments to a legal entity will be reduced in proportion to a member's ownership share in cases where a person or legal entity holds less than a 10 percent direct or indirect ownership interest and fails to provide a taxpayer identification number to USDA.

#### PARP General Requirements

General requirements that apply to other FSA-administered commodity programs also apply to PARP, including compliance with the provisions of 7 CFR part 12, "Highly Erodible Land and Wetland Conservation."

The regulations in 7 CFR part 1400, subpart E, are applicable to foreign persons and legal entities containing members, stockholders, or partners who are not U.S. citizens or resident aliens that own more than 10 percent of the legal entity. In order for a foreign person to receive a PARP payment, the person must provide land, capital, and a substantial amount of active personal labor to the farming operation, as required by § 1400.401(a), and comply with the other requirements of subpart E.

Additionally, United States Federal, State, and local governments (including public schools) are not eligible for PARP payments.

Appeal regulations specified in 7 CFR parts 11 and 780 and equitable relief and finality provisions in 7 CFR part 718, subpart D, apply to determinations under PARP. The determination of matters of general applicability that are not in response to, or result from, an individual set of facts in an individual

<sup>18</sup> See footnotes 7 and 11.



producer's application for payment are not matters that can be appealed. Such matters of general applicability include, but are not limited to, eligibility criteria, the payment calculation, and payment rates.

In the event that any application for a PARP payment resulted from erroneous information reported by the producer, the payment will be recalculated, and the producer must refund any excess payment to USDA, including interest to be calculated from the date of the disbursement to the producer. If FSA determines that the producer intentionally misrepresented information provided on their application, the application will be disapproved and the producer must refund the full payment to FSA with interest from the date of disbursement. Any required refunds must be resolved in accordance with debt settlement regulations in 7 CFR part 3.

### CFAP

USDA established CFAP to assist producers of agricultural commodities marketed in 2020 who faced continuing market disruptions, reduced farm-level prices, and increased production and marketing costs due to COVID-19 under authority provided by the Coronavirus Aid, Relief, and Economic Security Act (CARES Act; Pub. L. 116-136) and sections 5(b), (d), and (e) of the CCC Charter Act (15 U.S.C. 714c(b), (d), and (e)). USDA implemented CFAP through two rounds of payments (CFAP 1 and CFAP 2), administered by FSA. CFAP 1 was implemented through a final rule published in the **Federal Register** on May 21, 2020 (85 FR 30825-30835), with corrections published in the **Federal Register** on June 12, 2020 (85 FR 35799-35800), July 10, 2020 (85 FR 41328-41330), August 14, 2020 (85 FR 49593-49594), and September 21, 2020 (85 FR 59174-59175), and documents published in the **Federal Register** on May 22, 2020 (85 FR 31062-31065), June 12, 2020 (85 FR 35812), July 10, 2020 (85 FR 41321-41323), and August 14, 2020 (85 FR 49589-49593). USDA implemented CFAP 2 through a final rule published in the **Federal Register** on September 22, 2020 (85 FR 59380-59388). USDA also published a final rule in the **Federal Register** on January 19, 2021 (86 FR 4877-4883), to provide additional assistance for certain commodities under CFAP 1 and CFAP 2, but suspended implementation of that rule on January 20, 2021, to allow further evaluation of the assistance offered through CFAP. A final rule published on August 27, 2021 (86 FR 48013-48018), revised the CFAP 2 application deadline, amended

provisions for contract producers, and allowed producers of sales-based commodities to use 2018 sales for their payment calculation.

FSA is issuing an additional CFAP 2 payment to underserved farmers and ranchers.<sup>19</sup> These payments will be issued under the same authority as the producers' previous CFAP 2 payments, using CCC funds as authorized by sections 5(b), (d), and (e) of the CCC Charter Act (15 U.S.C. 714c(b), (d), and (e)), except for payments for tobacco which will use remaining funds authorized by the CARES Act. As provided in § 9.203(p), the additional payment will be equal to 15 percent of a producer's previous CFAP 2 payment, subject to CFAP 2 payment limitation provisions in § 9.7.<sup>20</sup> Contract producers are not eligible for this additional payment because CFAP 2 payments to contract producers were authorized and funded through the CAA, which specified that those payments could "cover not more than 80 percent of revenue losses." Previous CFAP 2 payments to contract producers were already calculated to have covered 80 percent of contract producers' revenue losses.

As specified in § 9.4(e), CCC-860, Socially Disadvantaged, Limited Resource, Beginning and Veteran Farmer or Rancher Certification, must be on file with FSA with a certification applicable for the 2020 program year to receive the additional payment.<sup>21</sup> Producers who have not previously certified to their status for the 2020 program year may submit CCC-860 until the date announced by the Deputy Administrator to be eligible for the additional payment.

The final rule published on January 19, 2021, included a provision for an additional CFAP 1 payment for hog and pig inventory owned between April 16, 2020, and May 14, 2020, based on a rate of \$17 per head. USDA suspended implementation of that provision and, after further review, USDA has determined that it will not issue the additional CFAP 1 payment for hog and pig inventory. To provide assistance to

<sup>19</sup> See footnote 11.

<sup>20</sup> This additional CFAP payment is similar to FSA's administration of ELRP Phase 1 and ERP Phase 1, which provided a 15 percent increase for payments to underserved producers and Congress has directed for underserved producers in some permanent disaster programs a 15 percent higher payment rate (Emergency Livestock Assistance Program or Emergency Conservation Program). Consistent with those programs, 15 percent has been determined as the increased rate for underserved producers.

<sup>21</sup> See footnote 7 for an explanation of how long an underserved producer's certification remains valid and the requirement to file CCC-860 in subsequent years.

hog producers, FSA implemented the Spot Market Hog Pandemic Program (SMHPP), which provided targeted assistance to producers who sold hogs through a spot market sale from April 16, 2020, through September 1, 2020, the period in which those producers faced the greatest reduction in market prices due to the COVID-19 pandemic. Producers of hogs and pigs may also be eligible for PARP as previously discussed in this rule if they suffered an eligible revenue loss in 2020.

FSA previously implemented mandatory provisions of CAA that provide additional assistance for producers of cattle, price trigger crops, and flat-rate crops. Cattle payments are based on inventory owned between April 16, 2020, to May 14, 2020, based on a producer's previously filed CFAP 1 application, multiplied by the following payment rates per head: \$14.75 for slaughter cattle—mature cattle, \$63 for slaughter cattle—fed cattle, \$7 for feeder cattle less than 600 pounds, \$25.50 for feeder cattle 600 pounds or more, and \$17.25 for all other cattle. Payments for flat-rate and price-trigger crops, as defined in § 9.201, are equal to the eligible acres of the crop included on a producer's CFAP 2 application, multiplied by a payment rate of \$20 per eligible acre. This rule amends the payment calculations for cattle in § 9.102(c), price trigger crops in § 9.203(a), and flat-rate crops in § 9.203(b) for consistency with CAA to reflect these additional payments. FSA already issued these payments and producers were not required to take any additional action to qualify. These payments were subject to existing CFAP payment limitations and eligibility requirements.

This rule amends the general CFAP provisions to clarify how FSA will handle applications when the taxpayer identification number for a person or legal entity that holds a direct or indirect ownership interest in a business structure is not provided to USDA. To receive a CFAP payment, a person or legal entity must provide their name, address, and taxpayer identification number to USDA. In addition, consistent with most other FSA programs, a legal entity must provide the name, taxpayer identification number, address and ownership share of each person or legal entity that holds or acquires a direct or indirect ownership interest in the legal entity; however, the previous CFAP rules did not specify how the failure to provide such information would affect the producer's payment eligibility. Previously, FSA had implemented this requirement by determining that the

producer was ineligible for payment. Rather than determining the producer ineligible for payment, in cases where a person or legal entity holding less than 10 percent direct or indirect ownership interest does not submit a taxpayer identification number, FSA will reduce the producer's payment in proportion to a member's ownership share when the taxpayer identification number for a person or legal entity that holds a direct or indirect ownership interest of less than 10 percent at, or above, the fourth level of ownership in the business structure is not provided to USDA as provided in § 9.7(i). Additionally, a legal entity will not be eligible to receive payment when a valid taxpayer identification number for a person or legal entity that holds a direct or indirect ownership interest of 10 percent or greater at, or above, the fourth level of ownership in the business structure is not provided to USDA as provided in § 9.7(i). USDA is making this change because many farm operations suffered sales losses and had increased marketing costs in 2020 due to the COVID-19 pandemic, and the ability to receive a partial CFAP payment will assist those operations in managing those losses and costs. USDA is not reopening the CFAP application period; this change only affects how FSA will process CFAP applications currently on file.

This rule also updates references throughout 7 CFR part 9, subparts A through C, to refer specifically to those subparts rather than part 9 due to the addition of subpart D for PARP.

#### **ECP, EFRP, and BCAP**

The Agricultural Credit Act of 1978 (16 U.S.C. 2201), amended by section 2403 of the Agriculture Improvement Act of 2018 (Pub. L. 115-334), authorizes ECP, and generally authorizes payments to farmers and ranchers to rehabilitate farmland damaged by certain natural disasters and to implement emergency water conservation measures in periods of severe drought. The ECP regulations are in 7 CFR part 701, subpart B.

Prior to this rule, land owned or controlled by the United States or States, including State agencies or other political subdivisions, was specified in the regulation as ineligible for cost share. This rule amends the general ECP provision at § 701.105 to allow eligibility of that land under certain conditions. The intent of this change is to allow producers who lease Federal and State land the opportunity to participate in ECP. This is consistent with the previous operational policy,

which allowed payments as specified in the FSA Handbook 1-ECP.<sup>22</sup>

This rule also corrects a typographical error in a section number to redesignate § 718.128 to be § 701.128. Prior to this rule, the ECP regulation authorized advance payment only for fence repair or replacement. This rule further amends § 701.128 to allow advance payments for all ECP practices. Consistent with the authorization for fence repair or replacement, ECP will provide advance payments of up to 25 percent of the cost for all ECP practices before the restoration is carried out. In the event this cost share assistance is not spent within 60 calendar days of being issued, the participant will be required to refund the advance cost-share payment. To reflect these changes, we are revising the section heading of § 701.128 to "Advance Payment."

Additionally, this rule clarifies the duplicate benefits provisions in § 701.111. The language was modified to further define parameters surrounding restoration activities being performed on the same piece of land. This will ensure that other Federal program-related benefits do not cover the same or similar expenses so as to create duplicative payments on the same piece of land and that any other Federal cost-share payments would not result in paying more than is authorized for ECP.

This rule also makes minor technical amendments to the existing ECP and EFRP regulations. Specifically, this rule:

- Adds the definition of "Socially disadvantaged farmer or rancher" and, within that definition, defines "Socially disadvantaged group" in § 701.2 to be consistent with the definition (7 U.S.C. 2279(a)) used in its authorizing legislation instead of defaulting to using the definition in § 718.2 and makes the same technical correction in § 1450.2 for the BCAP regulation;

- Removes outdated provisions, specifically removing: 7 CFR 701.44, 701.45, and 701.150 through 701.157;

- Adds the definition for "Forestland," removes the definition of "Commercial forestland," and corrects the definition of "Non-industrial private forestland" to remove the words "commercial forest" in § 701.102.

- Recognizes Public Law 117-180, the Continuing Appropriations and Ukraine Supplemental Appropriations Act, 2023, Division G, section 104(k)(3)(A) authorizing 100 percent Federal assistance for the cost of damages to producers associated with the "Hermit's Peak/Calf Canyon" Fire. This rule is amending the regulations in

7 CFR 701.126, 701.127, and 701.226 to authorize the Secretary to waive the maximum limitations to the maximum extent otherwise allowed by law.

#### **Supplemental Agricultural Disaster Assistance Programs**

This rule makes discretionary changes to ELAP, LFP, and LIP to amend what is considered eligible livestock. Previously, livestock that were maintained for pleasure, roping, pets, or show were ineligible under ELAP, LFP, and LIP. This rule removes those restrictions in §§ 1416.104, 1416.204, and 1416.304 because FSA recognizes that animals maintained in a commercial operation for those purposes have value and could be available for marketing from the farm. In addition, FSA is clarifying that horses and other animals used or intended to be used for racing or wagering are considered ineligible livestock for ELAP, LFP, and LIP.

This rule also amends §§ 1416.104 and 1416.204 to remove the restriction on ostrich eligibility for LFP and ELAP. FSA is making this change because ostriches satisfy more than 50 percent of their net energy requirement through the consumption of growing forage grasses and legumes; therefore, they are considered "grazing animals," as defined in §§ 1416.102 and 1416.202, for the purpose of LFP and ELAP. This change is effective for the 2022 program year for both LFP and ELAP. ELAP requires a notice of loss to be filed within 30 days of when the loss is first apparent. Because that deadline may have passed for producers' 2022 losses related to ostriches that occurred prior to publication of this rule, FSA is extending the deadline for those notices of loss through February 10, 2023.

This rule removes and reserves § 1416.5, which provides policy related to equitable relief determinations under ELAP, LFP, LIP, and the Tree Assistance Program (TAP). These programs are already subject to the general equitable relief provisions in 7 CFR part 718, subpart C; therefore, the provisions in § 1416.5 are unnecessary. Equitable relief for these programs will be administered in a manner that is consistent with other FSA programs to which part 718 applies. This rule also makes minor clarifications and technical corrections to the definition of "eligible loss condition" in § 1416.102 and to §§ 1416.103(a), 1416.103(d)(6), 1416.304(c)(3), 1416.305(g), and 1416.305(i).

#### **NAP**

FSA is amending the NAP regulations to update provisions related to

<sup>22</sup> See [https://www.fsa.usda.gov/internet/FSA\\_File/1-ecp\\_r06\\_a01.pdf](https://www.fsa.usda.gov/internet/FSA_File/1-ecp_r06_a01.pdf).

applications for coverage. This rule updates the definition of “application for coverage” and 7 CFR 1437.7(a) to reflect that the application for coverage may be filed in any FSA county office, rather than only in the producer’s administrative county. The definition of “application for coverage” is also amended to provide flexibility as FSA reviews ways to streamline the application process for underserved farmers and ranchers who are eligible for catastrophic coverage without paying a service fee.

Following the change to the regulation, FSA intends to designate the CCC–860 to be an application for catastrophic coverage for NAP if filed before the deadline for application for the coverage period. The catastrophic coverage for underserved producers, once in effect, will be treated as continuous coverage for all eligible crops as long as the producer’s certification is valid.<sup>23</sup> Once the applicable status expires, a producer will need to apply for NAP coverage by the deadline and pay the applicable service fee. Many underserved producers have previously filed a certification of their underserved status with FSA, and those producers will be considered as having timely applied for catastrophic coverage for the 2022 crop year if the certification was filed before the deadline for application for the NAP coverage period.

As provided in 7 CFR 1437.2(e), the Deputy Administrator may authorize State and county committees to waive or modify deadlines in cases where lateness or failure to meet such other requirements does not adversely affect the operation of NAP; therefore, FSA is amending 7 CFR 1437.6(a) to remove an unnecessary provision related to applications filed after the deadline. This rule also makes minor clarifications in 7 CFR 1437.7.

### Payment Eligibility

Notification of interest requirements in § 1400.107 provide that an entity is ineligible for any payment under any program listed in § 1400.1, including certain programs administered by the Natural Resources Conservation Service (NRCS), when the names and taxpayer identification numbers for members holding an ownership interest in the legal entity are not provided to FSA. FSA has determined for the programs that it administers that prohibiting payments to a legal entity when member

information is provided for some, but not all members, may adversely impact a farm operation’s sustainability during times when farm program payments may be a large portion of the farm’s income. FSA recognizes that names, addresses, valid taxpayer identification numbers, and ownership shares are important elements necessary to facilitate administration of FSA’s rules for payment eligibility and establishing maximum payment limitations for each program. However, if a valid taxpayer identification number is not provided for a member of a legal entity, FSA is still able to make applicable determinations of eligibility and establish a maximum payment limitation for the legal entity and its other members.

With this rule change, for programs administered by FSA, FSA will reduce the payment to a legal entity in proportion to a member’s ownership share in cases where a person or legal entity holding less than a 10 percent direct or indirect ownership interest fails to provide a valid taxpayer identification number, instead of prohibiting any payment to the legal entity. Additionally, a legal entity will not be eligible to receive payment when a valid taxpayer identification number for a person or legal entity that holds a direct or indirect ownership interest of 10 percent or greater, at or above the fourth level of ownership in the business structure, is not provided to USDA. This change will allow the legal entity to earn a partial payment based on the ownership shares of the members whose valid taxpayer identification numbers are submitted in cases where a member or members holding less than a 10 percent interest do not submit a valid taxpayer identification number.

NRCS has determined that such change in the notification requirements is not appropriate for the programs it administers. Unlike the intended purposes of FSA program payments, NRCS conservation program payments are not intended to provide economic support, including in times of disaster, to keep operations economically viable. Rather, they are payments made to reimburse a participant for costs incurred by a participant to voluntarily implement conservation practices and activities or payments made for the conveyance of a conservation easement. Therefore, for the programs NRCS administers, the participant is ineligible to receive any payment specified in § 1400.1(a)(7) or as NRCS provides in individual program regulations if the participant fails to provide: (1) the name, address, valid taxpayer identification number, and ownership

share of each person; or (2) the name, address, valid taxpayer identification number, and ownership share of each legal entity, that holds or acquires an ownership interest in the legal entity.

For programs administered by FSA that are subject to the provisions of § 1400.107, this change will be effective for the current and subsequent program years. FSA is also making this change retroactive to the 2020 program year, subject to funding availability, because many farm operations suffered income losses in 2020 due to the COVID–19 pandemic, and the ability to receive a partial payment under the applicable programs will assist those operations in managing those losses. FSA is not reopening sign up periods for programs with payments that could be affected by this change; it will only affect the way payments are processed for legal entities that previously filed applications. Because the notification of interest provisions are general provisions that are applicable to part 1400, subparts B, C, E, and F, FSA is also moving the notification of interest requirement from § 1400.107 in subpart B, Payment Limitation, to § 1400.10 in subpart A, General Provisions.

### Notice and Comment and Effective Date

The Administrative Procedure Act (APA, 5 U.S.C. 553(a)(2)) provides that the notice and comment and 30-day delay in the effective date provisions do not apply when the rule involves specified actions, including matters relating to benefits or contracts. This rule governs pandemic assistance and disaster assistance payments to certain commodity producers and therefore falls within the benefits exemption for ERP, PARP, ECP, BCAP, and the disaster assistance programs.

As specified in 7 U.S.C. 9091, the regulations to implement the ELAP, LIP, LFP, and NAP are:

- Exempt from the notice and comment provisions of 5 U.S.C. 553, and
- Exempt from the Paperwork Reduction Act (44 U.S.C. chapter 35).

As specified in 16 U.S.C. 3648, the regulations to implement EFRP are exempt from the Paperwork Reduction Act (44 U.S.C. chapter 35).

This rule is exempt from the regulatory analysis requirements of the Regulatory Flexibility Act (5 U.S.C. 601–612), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA). The requirements for the regulatory flexibility analysis in 5 U.S.C. 603 and 604 are specifically tied to the requirement for a proposed rule by section 553 or any other law; in

<sup>23</sup> See footnote 7 for an explanation of how long an underserved producer’s certification remains valid and the requirement to file CCC–860 in subsequent years.

addition, the definition of rule in 5 U.S.C. 601 is tied to the publication of a proposed rule.

The Office of Management and Budget (OMB) designated this rule as major under the Congressional Review Act (CRA), as defined by 5 U.S.C. 804(2). Section 808 of the CRA allows an agency to make a major regulation effective immediately if the agency finds there is good cause to do so. The beneficiaries of this rule have been significantly impacted by the COVID-19 outbreak and disaster events, which has resulted in significant declines in demand and market disruptions. USDA finds that notice and public procedure are contrary to the public interest. Therefore, even though this rule is a major rule for purposes of the Congressional Review Act, USDA is not required to delay the effective date for 60 days from the date of publication to allow for Congressional review. Accordingly, this rule is effective upon publication in the **Federal Register**.

#### Executive Orders 12866 and 13563

Executive Order 12866, "Regulatory Planning and Review," and Executive Order 13563, "Improving Regulation and Regulatory Review," direct agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasized the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. The requirements in Executive Orders 12866 and 13563 for the analysis of costs and benefits apply to rules that are determined to be significant.

The Office of Management and Budget (OMB) designated this rule as economically significant under Executive Order 12866 and therefore, OMB has reviewed this rule. The costs and benefits of this rule are summarized below. The full cost benefit analysis is available on [regulations.gov](https://www.regulations.gov).

#### Cost Benefit Analysis Summary

The cost-benefit analysis covers the unrelated programs or program changes, which are included in this rule, that largely address pandemic assistance or natural disaster assistance.

The accompanying rule announces *Phase 2 of the Emergency Relief Program (ERP)*, which addresses eligible crop losses not included in ERP Phase 1. ERP is authorized in the Extending Government Funding and Delivering

Emergency Assistance Act (Pub. L. 117-43), which provided \$10 billion for expenses related to losses of crops (including milk, on-farm stored commodities, crops prevented from planting in 2020 and 2021, and harvested adulterated wine grapes), trees, bushes, and vines, as a consequence of droughts, wildfires, hurricanes, and other events occurring in calendar years 2020 and 2021. Targeted outlays for ERP Phase 2 are \$1.2 billion; a pro-rate in payments is likely as gross outlays are projected at \$1.5 billion (see Table 1).

Two programs—including a new pandemic assistance program and additional assistance for underserved producers—address COVID-19 losses. Prior rules associated with the COVID-19 pandemic, CFAP 1, CFAP 2, and CFAP 2: Producers of Sales-Based Commodities and Contract Producers, assisted producers of agricultural commodities marketed in 2020 who faced continuing market disruptions, reduced farm-level prices, and increased production and marketing costs due to COVID-19. The additional costs are associated with declines in demand, surplus production, or disruptions to shipping patterns and marketing channels.

In implementing the pandemic related programs, USDA determined that additional assistance was necessary:

- **PARP** will assist producers with revenue loss resulting from the COVID-19 pandemic for eligible agricultural commodities. Payments will be made on a whole farm basis and not on a commodity-by-commodity basis. The aggregate allocation for PARP is targeted at \$250 million; a pro-rate in payments is likely as gross outlays are projected at \$2.7 billion (Table 1).

- **CFAP 2** recipients who are underserved (beginning, limited resource, socially disadvantaged, and veteran farmers and ranchers), excluding contract producers, will receive a 15-percent top-up payment. Net outlays are estimated at \$325 million (Table 1). As few underserved producers are likely to have AGI issues or reach the payment limit, gross and net outlays are assumed to be identical.

The other changes relate to existing FSA programs or requirements:

- **Expanded Eligibility of Animals in Livestock Disaster Programs**—This rule makes discretionary changes to ELAP, LFP, and LIP to amend the definition of eligible livestock. Previously, animals that contributed to the commercial viability of an operation and were maintained for the purposes of pleasure, roping, hunting, pets, or show, as well as animals intended for consumption by

an owner, lessee, or contract grower, were ineligible for ELAP, LFP, and LIP. This rule removes those restrictions. Estimated net outlays (accounting for AGI considerations, payment limits, and other reductions) are \$17.7 million annually.

- **Flexibility in Non-Insured Crop Disaster Assistance Program (NAP) Enrollment for Underserved Producers**—FSA is updating NAP provisions regarding program flexibilities for underserved producers. For example, the "application of coverage" is amended to provide flexibility as FSA reviews ways to streamline the application process for underserved farmers and ranchers. Net outlays are estimated at \$4.3 million annually (identical to the gross outlay estimate).

- **Notification of Interest Changes**—Prior to this rule, a legal entity was ineligible for farm programs when the names and valid taxpayer identification numbers for all members holding an ownership interest in the entity were not provided to USDA. Now, a legal entity can receive a partial payment in cases where a person or legal entity holding less than a 10 percent direct or indirect ownership interest fails to provide a taxpayer identification number. Net outlays are estimated at \$3.7 million annually.

- **ECP Expansion to Public Lands (that is, Federally- and State-owned Land)**—ECP provides payments to farmers and ranchers to rehabilitate farmland damaged by certain natural disasters and to implement emergency water conservation measures in periods of severe drought. ECP eligibility on public lands has not been included in the regulation until now. ECP coverage of public lands has been FSA policy, as specified in the FSA handbook, for many years, however, and FSA staff in the field have provided ECP assistance to both public and private lands since at least the 1990s. As a result, no increase in net outlays is expected.

- **ECP and EFRP and the Hermit's Peak/Calf Canyon Fire**—Section 104(3)(A) of the Continuing Appropriations and Ukraine Supplemental Appropriations Act, 2023 authorizes the Federal government to pay 100 percent of the ECP and Emergency Forest Restoration Program (EFRP) cost for damage associated with the Hermit's Peak/Calf Canyon Fire. This fire burned over 340,000 acres from April 2022 to June 2022 and was the largest wildfire in recorded history in New Mexico. The cost-share rate for both ECP and EFRP, prior to this legislation, was generally 75 percent regardless of location. The legislation

applies only to the locale of the Hermit's Peak/Calf Canyon Fire. The expected net cost is \$22.5 million for FY 2023.

Gross outlays for these items are estimated at \$4.5 billion (see Table 1). After taking into account AGI considerations and payment limitations,

as well as the targeted caps on ERP Phase 2 and PARP spending, net outlays are estimated at \$1.8 billion. ERP Phase 2 accounts for about two-thirds of expected total net outlays.

FSA will administer all programs in Table 1. Producers must fill out

paperwork to participate in these programs, and the associated administrative costs are estimated at \$18.4 million. Note that ERP Phase 2, PARP, and the Hermit's Peak/Calf's Canyon ECP/EFRP fire item use exclusively appropriated funds.

TABLE 1—ESTIMATED GROSS AND NET OUTLAYS FOR THE PANDEMIC ASSISTANCE AND AGRICULTURAL DISASTER ASSISTANCE PROGRAMS RULE FOR FY 2023

Item	Gross estimated outlays in 2023	Net estimated outlays	Implementing agency	Funding source
Item 1—Emergency Relief Program (ERP) Phase 2.	\$1.504 billion <sup>a</sup> .....	\$1.2 billion .....	FSA .....	Extending Government Funding and Delivering Emergency Assistance Act.
Item 2—PARP .....	\$2.662 billion <sup>b</sup> .....	250 million .....	FSA .....	CAA.
Item 3—15 Percent Top-Up for Underserved Recipients of CFAP 2 Payments.	325 million .....	325 million .....	FSA .....	CCC net transfer except for the tobacco portion, which is from the CARES Act.
Item 4—Recreational Animals and Livestock Disaster Programs.	19.5 million .....	17.7 million .....	FSA .....	CCC.
Item 5—Flexibility in NAP Enrollment for Underserved Producers <sup>d</sup> .	4.3 million .....	4.3 million .....	FSA .....	CCC.
Item 6—Notification of Interest Changes.	3.7 million .....	3.7 million .....	FSA .....	CCC.
Item 7—ECP and Public Lands .....	No change in cost	No change in cost	FSA .....	CCC.
Item 8—ECP and EFRP and the Hermit's Peak/Calf's Canyon Fire <sup>c</sup> .	24.2 million .....	22.5 million .....	FSA .....	Continuing Appropriations and Ukraine Supplemental Appropriations Act, 2023.
Total .....	4.54 billion .....	1.82 billion .....		

<sup>a</sup> This estimate uses the 50-percent loss scenario. Note that both 2020 and 2021 losses are expected to be paid in FY 2023. The significant difference between gross and net outlays is because the targeted amount for ERP Phase 2 spending is \$1.2 billion.

<sup>b</sup> This estimate represents the most plausible scenario but, as discussed below, gross estimated outlays could be considerably higher. Note that the significant difference between gross and net outlays is because the targeted amount for PARP spending is \$250 million.

<sup>c</sup> The difference between the gross and net amount is due to adjusted gross income (AGI) considerations, payment limitations, and other reductions.

<sup>d</sup> This estimate uses the 20 percent increase-in-participation scenario.

**Note:** Benefits associated with items 4 through 7 continue in FY 2023 and in perpetuity in each FY beyond. Payments associated with Items 1, 2, 3, and 8 are assumed to be paid in FY 2023 and to not continue beyond.

**Environmental Review**

The environmental impacts of this final rule have been considered in a manner consistent with the provisions of the National Environmental Policy Act (NEPA, 42 U.S.C. 4321–4347), the regulations of the Council on Environmental Quality (40 CFR parts 1500–1508), and because USDA will be making the payments to producers, the USDA regulation for compliance with NEPA (7 CFR part 1b).

Although OMB has designated this rule as “economically significant” under Executive Order 12866, “. . . economic or social effects are not intended by themselves to require preparation of an environmental impact statement” when not interrelated to natural or physical environmental effects (see 40 CFR 1502.16(b)). The pandemic assistance and disaster assistance programs were designed to avoid skewing planting decisions. Producers continue to make their planting and production decisions with the market signals in mind, rather than

any expectation of what a new USDA program might look like.

This rule includes discretionary amendments for ECP and EFRP. Accordingly, the discretionary provisions of this action are covered by the Categorical Exclusion, in 7 CFR 799.31(b)(2)(iii) for minor amendments or revisions to previously approved actions and § 799.31(b)(3)(i), for the issuance of minor technical corrections to regulations.

The rule implements discretionary amendments for BCAP, CFAP, ELAP, LIP, LFP, NAP, and PARP. The discretionary aspects are to improve administration of the programs and clarify existing program requirements. The change to BCAP is a technical clarification and does not alter the impacts or alternatives previously considered in the BCAP Programmatic Environmental Impact Statement and Record of Decision dated June 2010. FSA is providing the disaster assistance under ELAP, LIP, LFP, and NAP to eligible producers. The discretionary provisions would not alter any

environmental impacts resulting from implementing the mandatory changes to those programs. Accordingly, these discretionary aspects are covered by the following Categorical Exclusion: in 7 CFR 799.31(b)(6)(vi) safety net programs administered by FSA. ERP Phase 2 is a new regulation, which is a benefit program providing assistance after specific natural disasters; therefore, similar to the other programs discussed in this paragraph, ERP Phase 2 has similar discretionary aspects that are covered by the following Categorical Exclusion: in 7 CFR 799.31(b)(6)(vi) safety net programs administered by FSA.

Through this review, FSA determined that the proposed discretionary changes in this rule fit within the categorical exclusions listed above. Categorical exclusions apply when no extraordinary circumstances (§ 799.33) exist. Therefore, as this rule presents only discretionary amendments that will not have an impact to the human environments, individually or cumulatively, FSA will not prepare an

environmental assessment or environmental impact statement for this rule; this rule serves as documentation of the programmatic environmental compliance decision for this federal action.

#### Executive Order 12988

This rule has been reviewed under Executive Order 12988, "Civil Justice Reform." This rule will not preempt State or local laws, regulations, or policies unless they represent an irreconcilable conflict with this rule. For the payment eligibility regulation changes, payments will be adjusted retroactively, starting in January 2020, as discussed above in the Payment Eligibility section, above. For the ELAP regulation changes, payments will be made retroactively starting at January 1, 2021, as discussed in the Cost Benefit Analysis Summary section, above. Before any judicial actions may be brought regarding the provisions of this rule, the administrative appeal provisions of 7 CFR parts 11 and 780 are to be exhausted.

#### Executive Order 13175

This rule has been reviewed in accordance with the requirements of Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments." Executive Order 13175 requires Federal agencies to consult and coordinate with Tribes on a government-to-government basis on policies that have Tribal implications, including regulations, legislative comments or proposed legislation, and other policy statements or actions that have substantial direct effects on one or more Indian Tribes, on the relationship between the Federal Government and Indian Tribes, or on the distribution of power and responsibilities between the Federal Government and Indian Tribes.

USDA has assessed the impact of this rule on Indian Tribes and determined that this rule does not, to our knowledge, have Tribal implications that required Tribal consultation under Executive Order 13175 at this time. If a Tribe requests consultation, the USDA Office of Tribal Relations (OTR) will ensure meaningful consultation is provided where changes, additions, and modifications are not expressly mandated by law. Outside of Tribal consultation, USDA is working with Tribes to provide information about pandemic assistance, agricultural disaster assistance, and other issues.

#### Unfunded Mandates

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA, Pub. L. 104-4) requires Federal agencies to

assess the effects of their regulatory actions of State, local, and Tribal governments or the private sector. Agencies generally must prepare a written statement, including cost benefits analysis, for proposed and final rules with Federal mandates that may result in expenditures of \$100 million or more in any 1 year for State, local or Tribal governments, in the aggregate, or to the private sector. UMRA generally requires agencies to consider alternatives and adopt the more cost effective or least burdensome alternative that achieves the objectives of the rule. This rule contains no Federal mandates, as defined in Title II of UMRA, for State, local and Tribal governments or the private sector. Therefore, this rule is not subject to the requirements of sections 202 and 205 of UMRA.

#### Federal Assistance Programs

The titles and numbers of the Federal Domestic Assistance Programs found in the Catalog of Federal Domestic Assistance to which this rule applies are:

- 10.051—Commodity Loans and Loan Deficiency Payments
- 10.054—Emergency Conservation Program
- 10.069—Conservation Reserve Program
- 10.087—Biomass Crop Assistance Program
- 10.088—Livestock Indemnity Program
- 10.089—Livestock Forage Disaster Program
- 10.091—Emergency Assistance for Livestock, Honeybees, and Farm-Raised Fish Program
- 10.092—Tree Assistance Program
- 10.112—Price Loss Coverage
- 10.113—Agriculture Risk Coverage
- 10.130—Coronavirus Food Assistance Program 1
- 10.132—Coronavirus Food Assistance Program 2
- 10.143—Pandemic Assistance Revenue Program
- 10.451—Noninsured Assistance
- 10.912—Environmental Quality Incentives Program
- 10.917—Agricultural Management Assistance
- 10.964—Emergency Relief Program

#### Paperwork Reduction Act

As noted above, the regulations to implement the EFRP, ELAP, LIP, LFP, and NAP changes are exempt from PRA as specified in 7 U.S.C. 9091(c)(2)(B) and 16 U.S.C. 3846(b)(1).

For ECP and BCAP, there are no changes to the information collection activities approved by OMB under control number 0560-0082.

In accordance with the Paperwork Reduction Act of 1995, the PARP

information collection activity was submitted to OMB for emergency approval. FSA will collect and evaluate the application and other required paperwork from the producers for PARP. The forms are described above in the PARP Application Process section. Following the 60-day public comment period provided by this rule, FSA intends to request 3-year OMB approval to cover the PARP information collection request.

*Title:* PARP.

*OMB Control Number:* 0560-New.

*Type of Request:* New Collection.

*Abstract:* This information collection is required to support PARP information collection activities to provide payments to eligible producers who, with respect to their agricultural commodities, have been impacted by the effects of the COVID-19 pandemic. The information collection is necessary to evaluate the application and other required paperwork for determining the producer's eligibility and assist in the producer's payment calculations. The forms are included in the request.

For the following estimated total annual burden on respondents, the formula used to calculate the total burden hour is the estimated average time per response multiplied by the estimated total annual responses.

*Estimate of Respondent Burden:* Public reporting burden for this information collection is estimated to average 0.51385 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collections of information.

*Type of Respondents:* Producers or farmers.

*Estimated Annual Number of Respondents:* 313,901.

*Estimated Number of Responses per Respondent:* 1.6550.

*Estimated Total Annual Responses:* 519,506.

*Estimated Average Time per Response:* 0.51385 hours.

*Estimated Annual Burden on Respondents:* 266,947 hours.

Also, FSA is requesting comments from all interested individuals and organizations on a new information collection associated with ERP Phase 1 and 2. The emergency request was approved for the ERP Phase 1 using OMB control number 0560-0309. The emergency request was approved for the ERP Phase 2 using temporary OMB control number. The ERP Phase 2 will be merged with the approved 0560-0309 information collection request. ERP is for the producers who suffered

losses of crops, trees, bushes, and vines due to wildfires, hurricanes, floods, derechos, excessive heat, winter storms, freeze (including a polar vortex), smoke exposure, excessive moisture, qualifying drought, and related conditions occurring in calendar years 2020 and 2021. FSA needs to disburse the payments to the eligible producers to cover the losses of crops, trees, bushes and vines, and the payments will seriously assist the producers not to consider making business decisions to lose the farm business.

*Title:* ERP Phase 2.

*Type of Request:* New.

*Abstract:* ERP is for the producers who suffered losses of crops, trees, bushes, and vines due to wildfires, hurricanes, floods, derechos, excessive heat, winter storms, freeze (including a polar vortex), smoke exposure, excessive moisture, qualifying drought, and related conditions occurring in calendar years 2020 and 2021. FSA needs to disburse the payments to the eligible producers to cover the losses of crops, trees, bushes and vines, and the payments will seriously assist the producers not to consider making business decisions to lose the farm business.

For the following estimated total annual burden on respondents, the formula used to calculate the total burden hour is the estimated average time per response multiplied by the estimated total annual responses.

*Estimate of Respondent Burden:* Public reporting burden for this information collection is estimated to average 0.54492 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collections of information.

*Type of Respondents:* Producers or farmers.

*Estimated Annual Number of Respondents:* 48,402.

*Estimated Number of Responses per Respondent:* 2.085.

*Estimated Total Annual Responses:* 100,918.

*Estimated Average Time per Response:* 0.54492 hours.

*Estimated Annual Burden on Respondents:* 54,992 hours.

Also, FSA is requesting comments from all interested individuals and organizations on a new information collection associated with CFAP 2. The emergency request was approved under a temporary OMB control number and will merge with CFAP 2 under the OMB control number 0560–0297.

*Title:* CFAP 2.

*Type of Request:* New.

*Abstract:* This information collection is required to support CFAP 2 information collection activities to provide payments to eligible producers who, with respect to their agricultural commodities, have been impacted by the effects of the COVID–19 pandemic. The information collection is necessary to evaluate the application and other required paperwork for determining the producer's eligibility and assist in the producer's payment calculations.

For the following estimated total annual burden on respondents, the formula used to calculate the total burden hour is the estimated average time per response multiplied by the estimated total annual responses.

*Estimate of Respondent Burden:* Public reporting burden for this information collection is estimated to average 0.0999 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collections of information.

*Type of Respondents:* Producers or farmers.

*Estimated Annual Number of Respondents:* 96,973.

*Estimated Number of Responses per Respondent:* 1.

*Estimated Total Annual Responses:* 96,973.

*Estimated Average Time per Response:* 0.0999 hours.

*Estimated Annual Burden on Respondents:* 9,697 hours.

FSA is requesting comments on all aspects of this information collection to help FSA to:

(1) Evaluate whether the collection of information is necessary for the proper performance of the functions of FSA, including whether the information will have practical utility;

(2) Evaluate the accuracy of the FSA's estimate of burden including the validity of the methodology and assumptions used;

(3) Enhance the quality, utility, and clarity of the information to be collected; and

(4) Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

All comments received in response to this document, including names and addresses when provided, will be a matter of public record. Comments will be summarized and included in the

submission for Office of Management and Budget approval.

### USDA Non-Discrimination Policy

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family or parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (for example, braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA TARGET Center at (202) 720–2600 or (844) 433–2774 (toll-free nationwide). Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD–3027, found online at <https://www.usda.gov/oascr/how-to-file-a-program-discrimination-complaint> and at any USDA office or write a letter addressed to USDA and provide in the letter all the information requested in the form. To request a copy of the complaint form, call (866) 632–9992. Submit your completed form or letter to USDA by mail to: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue SW, Washington, DC 20250–9410 or email: [OAC@usda.gov](mailto:OAC@usda.gov).

USDA is an equal opportunity provider, employer, and lender.

### List of Subjects

#### 7 CFR Part 9

Agricultural commodities, Agriculture, Disaster assistance, Indemnity payments.

#### 7 CFR Part 701

Disaster assistance, Environmental protection, Forests and forest products, Grant programs—agriculture, Grant programs—natural resources, Reporting and recordkeeping requirements, Rural

areas, Soil conservation, Water resources, Wildlife.

7 CFR Part 760

Dairy products, Indemnity payments, Reporting and recordkeeping requirements.

7 CFR Part 1400

Agriculture, Grant programs—agriculture, Loan programs—agriculture, Natural resources, Price support programs.

7 CFR Part 1416

Administrative practice and procedure, Agriculture, Disaster assistance, Fruits, Livestock, Nursery stock, Seafood.

7 CFR Part 1437

Acreage allotments, Agricultural commodities, Crop insurance, Disaster assistance, Fraud, Penalties, Reporting and recordkeeping requirements.

7 CFR Part 1450

Administrative practice and procedure, Agriculture, Energy, Environmental protection, Grant programs—agriculture, Natural resources, Reporting and recordkeeping requirements, Technical assistance.

For the reasons discussed above, this final rule amends 7 CFR parts 9, 701, 760, 1400, 1416, 1437, and 1450 as follows:

PART 9—PANDEMIC ASSISTANCE PROGRAMS

1. The authority citation for part 9 continues to read as follows:

Authority: 15 U.S.C. 714b and 714c; Division B, Title I, Pub. L. 116–136, 134 Stat. 505; and Division N, Title VII, Subtitle B, Chapter 1, Pub. L. 116–260.

2. Revise the heading for part 9 to read as set forth above.

Subpart A—CFAP General Provisions

3. Revise the heading for subpart A to read as set forth above.

§ 9.1 [Amended]

4. Amend § 9.1 as follows:

a. In paragraph (a) introductory text, remove the words “This part specifies” and add “Subparts A through C of this part specify” in their place, and remove the words “payment made under this part” and add “CFAP payment” in their place;

b. In paragraph (c), remove the words “this part” each time they appear and add “subparts A through C of this part” in their place; and

c. In paragraph (d), remove words “the programs of this part” and add “CFAP” in their place.

5. Amend § 9.2 as follows:

a. In the introductory text, remove the words “this part” and add “subparts A through C of this part” in its place;

b. In the definition of “NOFA”, remove the words “under this part”; and

c. Add a definition for “Ownership interest” in alphabetical order.

The addition reads as follows:

§ 9.2 Definitions.

\* \* \* \* \*

Ownership interest means to have either legal ownership interest or beneficial ownership interest in a legal entity. For the purposes of administering CFAP, a person or legal entity that owns a share or stock in a legal entity that is a corporation, limited liability company, limited partnership, or similar type entity, and shares in the profits or losses of such entity is considered to have an ownership interest in such legal entity. A person or legal entity that is a beneficiary of a trust or heir of an estate who benefits from the profits or losses of such entity is also considered to have an ownership interest in such legal entity.

\* \* \* \* \*

§ 9.3 [Amended]

6. Amend § 9.3 as follows:

a. In paragraph (a), remove the words “this part” and add “subparts A through C of this part” in their place; and

b. In paragraph (b)(2), remove the words “this part means” and add “subparts A through C of this part means” in its place.

7. Amend § 9.4 by adding paragraph (e) to read as follows:

§ 9.4 Time and method of application.

\* \* \* \* \*

(e) To receive an additional payment under § 9.203(p), a producer must submit form CCC–860, Socially Disadvantaged, Limited Resource, Beginning and Veteran Farmer or Rancher Certification, with a certification applicable to the 2020 program year by the date announced by the Deputy Administrator.

8. Amend § 9.7 as follows:

a. In paragraphs (b), (c), (d), and (e)(2)(ii) and (iii), add the words “subparts A through C of” before the words “this part” each time they appear;

b. In paragraph (h), remove the words “This part applies” and add “Subparts A through C of this part apply” in their place; and

c. Add paragraph (i).

The addition reads as follows.

§ 9.7 Miscellaneous provisions.

\* \* \* \* \*

(i) To be eligible to receive a CFAP payment and facilitate administration of paragraphs (d) and (e) of this section, a person or legal entity must provide their name, address, and taxpayer identification number to USDA. In addition, a legal entity must provide the name taxpayer identification number, address and ownership share of each person or legal entity that holds or acquires a direct or indirect ownership interest in the legal entity. CFAP payments to a legal entity will be reduced in proportion to a member’s ownership share when the taxpayer identification number for a person or legal entity that holds less than a 10 percent direct or indirect ownership interest at, or above, the fourth level of ownership in the business structure is not provided to USDA. Additionally, a legal entity will not be eligible to receive CFAP payments when a valid taxpayer identification number for a person or legal entity that holds a direct or indirect ownership interest of 10 percent or greater, at or above the fourth level of ownership in the business structure, is not provided to USDA.

Subpart B—CFAP 1

§ 9.101 [Amended]

9. Amend § 9.101, in the definition of “All other cattle”, by removing the word “part” and adding “subpart” in its place.

10. Amend § 9.102 as follows:

a. In paragraph (c) introductory text, remove the word “two” and add “three” in its place;

b. In paragraph (c)(1), remove the word “and”;

c. In paragraph (c)(2), remove the period and add “; and” at the end of the paragraph;

d. Add paragraph (c)(3);

e. In paragraph (d) introductory text, remove the word “three” and add “two” in its place;

f. In paragraph (d)(1), add the word “and” at the end of the paragraph;

g. In paragraph (d)(2), remove “; and” and add a period in its place; and

h. Remove paragraph (d)(3).

The addition reads as follows.

§ 9.102 Calculation of payments.

\* \* \* \* \*

(c) \* \* \*

(3) Cattle inventory owned between April 16, 2020, to May 14, 2020, multiplied by:

(i) \$14.75 for slaughter cattle—mature cattle;



- (ii) \$63 for slaughter cattle—fed cattle;
- (iii) \$7 for feeder cattle less than 600 pounds;
- (iv) \$25.50 for feeder cattle 600 pounds or more; and
- (v) \$17.25 for all other cattle.

\* \* \* \* \*

**Subpart C—CFAP 2**

■ 11. In § 9.201, add definitions for “Beginning farmer or rancher”, “Limited resource farmer or rancher”, “Socially disadvantaged farmer or rancher”, “Underserved farmer or rancher”, and “Veteran farmer or rancher” in alphabetical order to read as follows:

**§ 9.201 Definitions.**

\* \* \* \* \*

*Beginning farmer or rancher* means a farmer or rancher who has not operated a farm or ranch for more than 10 years and who materially and substantially participates in the operation. For a legal entity to be considered a beginning farmer or rancher, at least 50 percent of the interest must be beginning farmers or ranchers.

\* \* \* \* \*

*Limited resource farmer or rancher* means a farmer or rancher:

- (1) Who is a person whose:
  - (i) Direct or indirect gross farm sales did not exceed \$180,300 in each calendar year for 2017 and 2018 (the relevant years for the 2020 program year); and
  - (ii) Total household income was at or below the national poverty level for a family of four in each of the same two previous years referenced in paragraph (1)(i) of this definition;<sup>24</sup> or
  - (2) That is an entity and all members who hold an ownership interest in the entity meet the criteria in paragraph (1) of this definition.

\* \* \* \* \*

*Socially disadvantaged farmer or rancher* means a farmer or rancher who is a member of a group whose members have been subjected to racial, ethnic, or gender prejudice because of their identity as members of a group without regard to their individual qualities. For entities, at least 50 percent of the ownership interest must be held by individuals who are members of such a group. Socially disadvantaged groups include the following and no others unless approved in writing by the Deputy Administrator:

- (1) American Indians or Alaskan Natives;
- (2) Asians or Asian-Americans;
- (3) Blacks or African Americans;
- (4) Hispanics or Hispanic Americans;
- (5) Native Hawaiians or other Pacific Islanders; and
- (6) Women.

\* \* \* \* \*

*Underserved farmer or rancher* means a beginning farmer or rancher, limited resource farmer or rancher, socially disadvantaged farmer or rancher, or veteran farmer or rancher.

\* \* \* \* \*

*Veteran farmer or rancher* means a farmer or rancher:

- (1) Who has served in the Armed Forces (as defined in 38 U.S.C. 101(10)<sup>25</sup>) and:
  - (i) Has not operated a farm or ranch for more than 10 years; or
  - (ii) Has obtained status as a veteran (as defined in 38 U.S.C. 101(2)<sup>26</sup>) during the most recent 10-year period; or
  - (2) That is an entity and at least 50 percent of the ownership interest is held by members who meet the criteria in paragraph (1) of this definition.

\* \* \* \* \*

**§ 9.202 [Amended]**

- 12. Amend § 9.202 as follows:
  - a. In paragraph (a), remove the words “this part” and add the words “subpart A of this part and this subpart” in their place; and
  - b. In paragraphs (b)(4) and (d)(2), remove the words “this part” and add the words “subpart A of this part and this subpart” in their place.
- 13. Amend § 9.203 as follows:
  - a. Add paragraph (a)(5);
  - b. In paragraph (b), add a sentence at the end of the paragraph;
  - c. In paragraphs (f)(2) and (h)(2), remove the word “part” and add the word “subpart” in its place; and
  - d. Add paragraph (p).

The additions read as follows.

**§ 9.203 Calculation of payments.**

- (a) \* \* \*
- (5) An additional payment will be issued for price trigger crops equal to the eligible acres of the crop multiplied by a payment rate of \$20 per acre.
- (b) \* \* \* An additional payment will be issued for flat-rate crops equal to the eligible acres of the crop multiplied by a payment rate of \$20 per acre.

\* \* \* \* \*

<sup>25</sup> The term “Armed Forces” means the United States Army, Navy, Marine Corps, Air Force, Space Force, and Coast Guard, including the reserve components.

<sup>26</sup> The term “veteran” means a person who served in the active military, naval, air, or space service, and who was discharged or released under conditions other than dishonorable.

(p) An additional payment equal to 15 percent of a producer’s CFAP 2 payment calculated according to paragraphs (a) through (k) of this section will be issued to producers who have certified their status as an underserved farmer or rancher, applicable to the 2020 program year, on CCC–860, Socially Disadvantaged, Limited Resource, Beginning and Veteran Farmer or Rancher Certification.

■ 14. Add subpart D, consisting of §§ 9.301 through 9.310, to read as follows:

**Subpart D—Pandemic Assistance Revenue Program**

- Sec.
- 9.301 Applicability and administration.
- 9.302 Definitions.
- 9.303 Producer eligibility requirements.
- 9.304 Allowable gross revenue.
- 9.305 Time and method of application.
- 9.306 Payment calculation.
- 9.307 Adjusted gross income limitation, payment limitation, and attribution.
- 9.308 Eligibility subject to verification.
- 9.309 Miscellaneous provisions.
- 9.310 Perjury.

**Subpart D—Pandemic Assistance Revenue Program**

**§ 9.301 Applicability and administration.**

(a) This subpart specifies the eligibility requirements and payment calculations for the Pandemic Assistance Revenue Program (PARP). FSA is administering PARP to respond to the COVID–19 pandemic by providing support for eligible producers of agricultural commodities who suffered an eligible revenue loss in calendar year 2020 due to the COVID–19 pandemic. To be eligible for PARP payments, participants must comply with all provisions under this subpart.

(b) PARP is administered under the general supervision and direction of the Administrator, Farm Service Agency (FSA).

(c) The FSA State committee will take any action required by this subpart that an FSA county committee has not taken. The FSA State committee will also:

- (1) Correct, or require an FSA county committee to correct, any action taken by such county FSA committee that is not in accordance with the regulations of this subpart; or
- (2) Require an FSA county committee to withhold taking any action that is not in accordance with this subpart.

(d) No provision or delegation to an FSA State or county committee will preclude the FSA Administrator, the Deputy Administrator, or a designee or other such person, from determining any question arising under the programs of this subpart, or from reversing or

<sup>24</sup> Limited resource farmer or rancher status can be determined using a website available through the Limited Resource Farmer and Rancher Online Self Determination Tool through Natural Resources Conservation Service at <https://lrftool.sc.egov.usda.gov>.

modifying any determination made by an FSA State or county committee.

(e) The Deputy Administrator has the authority to permit State and county committees to waive or modify deadlines (except deadlines specified in a law) and other requirements or program provisions not specified in law, in cases where lateness or failure to meet such other requirements or program provisions do not adversely affect operation of PARP.

### § 9.302 Definitions.

The following definitions apply to this subpart. The definitions in part 1400 of this title apply, except where they conflict with the definitions in this section.

*2017 WHIP* means the 2017 Wildfires and Hurricanes Indemnity Program under 7 CFR part 760, subpart O.

*Agricultural commodity* means a crop, aquaculture, livestock, livestock byproduct, or other animal or animal byproduct that is produced as part of a farming operation and is intended to be commercially marketed. It includes only commodities produced in the United States, or produced outside the United States by a producer located in the United States and marketed inside the United States. It excludes:

(1) Wild free-roaming animals;

(2) Horses and other animals used or intended to be used for racing or wagering;

(3) Aquatic species that do not meet the definition of aquaculture;

(4) *Cannabis sativa* L. and any part of that plant that does not meet the definition of hemp; and

(5) Timber.

*Applicable pandemic assistance* includes payments received directly by an applicant under the following programs:

(1) The Coronavirus Food Assistance Program (CFAP);

(2) The Pandemic Livestock Indemnity Program (PLIP); and

(3) The Spot Market Hog Pandemic Program (SMHPP).

*Application* means the PARP application form.

*Aquaculture* means any species of aquatic organisms grown as food for human or livestock consumption or for industrial or biomass uses, fish raised as feed for fish that are consumed by humans, and ornamental fish propagated and reared in an aquatic medium. Eligible aquacultural species must be raised by a commercial operator and in water in a controlled environment.

*ARC and PLC* means the Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC) programs under 7 CFR part 1412.

*BCAP* means the Biomass Crop Assistance Program under 7 CFR part 1450.

*Beginning farmer or rancher* means a farmer or rancher who has not operated a farm or ranch for more than 10 years and who materially and substantially participates in the operation. For a legal entity to be considered a beginning farmer or rancher, at least 50 percent of the interest must be beginning farmers or ranchers.

*Cattle feeder operation* means an operation that intensely feeds cattle on behalf of another person or entity for finishing purposes and is compensated based on feed, yardage, or weight gain of the cattle.

*CCC* means the Commodity Credit Corporation.

*CFAP* means the Coronavirus Food Assistance Program 1 and 2 under 7 CFR part 9, subparts A through C, excluding assistance for contract producers specified in § 9.203(l) through (o).

*Contract producer* means a producer who grows or produces an agricultural commodity under contract for or on behalf of another person or entity. The contract producer does not have ownership in the commodity and is not entitled to a share from sales proceeds of the commodity. The term “contract producer” does not include cattle feeder operations.

*Controlled environment* means an environment in which everything that can practicably be controlled by the producer with structures, facilities, and growing media (including but not limited to water, soil, or nutrients), is in fact controlled by the producer, as determined by industry standards.

*County* means the county or parish of a state. For Alaska, Puerto Rico, and the Virgin Islands, a county is an area designated by the State committee with the concurrence of the Deputy Administrator.

*County committee* means the FSA county committee.

*Crop insurance* means an insurance policy reinsured by Federal Crop Insurance Corporation under the provisions of the Federal Crop Insurance Act, as amended, or a private plan of insurance.

*Deputy Administrator* means Deputy Administrator for Farm Programs, Farm Service Agency, U.S. Department of Agriculture, or their designee.

*DMC* means the Dairy Margin Coverage Program under 7 CFR part 1430, subpart D.

*ELAP* means the Emergency Assistance for Livestock, Honeybees, and Farm-Raised Fish Program under 7 CFR part 1416, subpart B.

*ERP* means the Emergency Relief Program, which was administered in 2 phases:

(1) ERP Phase 1, administered according to the notice of funds availability published in the **Federal Register** on May 18, 2022 (87 FR 30164–30172) and the clarification to the notice of funds availability that was published on August 18, 2022 (87 FR 50828–50830); and

(2) ERP Phase 2, administered according to 7 CFR part 760, subpart S.

*Farming operation* means a business enterprise engaged in the production of agricultural products, commodities, or livestock, operated by a person, legal entity, or joint operation, and that is eligible to receive payments, directly or indirectly, under this subpart. A person or legal entity may have more than one farming operation if the person or legal entity is a member of one or more legal entity or joint operation.

*Foreign entity* means a corporation, trust, estate, or other similar organization that has more than 10 percent of its beneficial interest held by individuals who are not:

(1) Citizens of the United States; or

(2) Lawful aliens possessing a valid Alien Registration Receipt Card.

*Foreign person* means any person who is not a citizen or national of the United States or who is admitted into the United States for permanent residence under the Immigration and Nationality Act and possesses a valid Alien Registration Receipt Card issued by the United States Citizenship and Immigration Services, Department of Homeland Security.

*Hemp* means the plant species *Cannabis sativa* L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta-9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis, that is grown under a license or other required authorization issued by the applicable governing authority that permits the production of the hemp.

*IRS* means the Department of Treasury, Internal Revenue Service.

*LDP* means the Loan Deficiency Payment programs in 7 CFR parts 1421, 1425, 1427, 1434, and 1435.

*Legal entity* means a corporation, joint stock company, association, limited partnership, irrevocable trust, estate, charitable organization, or other similar organization including any such organization participating in a business structure as a partner in a general partnership, a participant in a joint venture, a grantor of a revocable trust,

or as a participant in a similar organization. A business operating as a sole proprietorship is considered a legal entity.

*Limited resource farmer or rancher* means a farmer or rancher:

(1) Who is a person whose:

(i) Direct or indirect gross farm sales did not exceed \$180,300 in each calendar year for 2017 and 2018 (the relevant years for the 2020 program year); and

(ii) Total household income was at or below the national poverty level for a family of four in each of the same two previous years referenced in paragraph (1)(i) of this definition;<sup>1</sup> or

(2) That is an entity and all members who hold an ownership interest in the entity meet the criteria in paragraph (1) of this definition.

*LFP* means the Livestock Forage Disaster Program under CFR part 1416, subpart C.

*LIP* means the Livestock Indemnity Program under 7 CFR part 1416, subpart D.

*Minor child* means a person who is under 18 years of age as of June 1, 2020.

*MFP* means the 2018 Market Facilitation Program under 7 CFR part 1409, subpart A, and the 2019 Market Facilitation Program under 7 CFR part 1409, subpart B.

*Milk Loss Program* means the Milk Loss Program under 7 CFR part 760, subpart Q.

*MLG* means a marketing loan gain under the Marketing Assistance Loan programs in 7 CFR parts 1421, 1425, 1427, 1434, and 1435.

*MPP-Dairy* means the Margin Protection Program for Dairy under 7 CFR part 1430, subpart A.

*NAP* means the Noninsured Crop Disaster Assistance Program under section 196 of the Federal Agriculture Improvement and Reform Act of 1996 (7 U.S.C. 7333) and 7 CFR part 1437.

*On-Farm Storage Loss Program* means the On-Farm Storage Loss Program under 7 CFR part 760, subpart P.

*Ownership interest* means to have either legal ownership interest or beneficial ownership interest in a legal entity. For the purposes of administering PARP, a person or legal entity that owns a share or stock in a legal entity that is a corporation, limited liability company, limited partnership, or similar type entity where members hold a legal ownership interest and shares in the profits or losses of such

entity is considered to have an ownership interest in such legal entity. A person or legal entity that is a beneficiary of a trust or heir of an estate who benefits from the profits or losses of such entity is also considered to have a beneficial ownership interest in such legal entity.

*Person* means an individual, natural person and does not include a legal entity.

*PLIP* means the Pandemic Livestock Indemnity Program announced in the notice of funds availability published on July 19, 2021 (86 FR 37990–37994).

*PMVAP* means the Pandemic Market Volatility Assistance Program administered by USDA's Agricultural Marketing Service.

*Producer* means a person or legal entity who was in the business of farming to produce an agricultural commodity in calendar year 2020, and who was entitled to a share in the agricultural commodity available for marketing or would have shared had the agricultural commodity been produced and marketed. For PARP, "producer" also includes cattle feeder operations.

*Socially disadvantaged farmer or rancher* means a farmer or rancher who is a member of a group whose members have been subjected to racial, ethnic, or gender prejudice because of their identity as members of a group without regard to their individual qualities. For entities, at least 50 percent of the ownership interest must be held by individuals who are members of such a group. Socially disadvantaged groups include the following and no others unless approved in writing by the Deputy Administrator:

- (1) American Indians or Alaskan Natives;
- (2) Asians or Asian-Americans;
- (3) Blacks or African Americans;
- (4) Hispanics or Hispanic Americans;
- (5) Native Hawaiians or other Pacific Islanders; and
- (6) Women.

*TAP* means the Tree Assistance Program under 7 CFR part 1416, subpart E.

*SMHPP* means the Spot Market Hog Pandemic Program announced in the notice of funds availability published on December 14, 2021 (86 FR 71003–71007).

*STRP* means the Seafood Trade Relief Program announced in the notice of funds availability published on September 14, 2020 (85 FR 56572–56575).

*Underserved farmer or rancher* means a beginning farmer or rancher, limited resource farmer or rancher, socially disadvantaged farmer or rancher, or veteran farmer or rancher.

*United States* means all 50 States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, and any other territory or possession of the United States.

*Veteran farmer or rancher* means a farmer or rancher:

(1) Who has served in the Armed Forces (as defined in 38 U.S.C. 101(10)<sup>2</sup>) and:

(i) Has not operated a farm or ranch for more than 10 years; or

(ii) Has obtained status as a veteran (as defined in 38 U.S.C. 101(2)<sup>3</sup>) during the most recent 10-year period; or

(2) That is an entity and at least 50 percent of the ownership interest is held by members who meet the criteria in paragraph (1) of this definition.

*WHIP+* means the Wildfires and Hurricanes Indemnity Program Plus under 7 CFR part 760, subpart O.

### § 9.303 Producer eligibility requirements.

(a) To be eligible for PARP, a producer must:

(1) Have been in the business of farming in the 2020 calendar year;

(2) Have had at least a 15 percent decrease in allowable gross revenue for the 2020 calendar year, as compared to the:

(i) Actual allowable gross revenue for the 2018 or 2019 calendar year, whichever is reflective of a typical year, as elected by the producer, if the producer had allowable gross revenue in the 2018 or 2019 calendar year; or

(ii) Producer's expected allowable gross revenue for the 2020 calendar year, if the producer had no allowable gross revenue for the 2018 and 2019 calendar years; and

(3) Meet all other requirements for eligibility under this subpart.

(b) To be eligible for a PARP payment, a producer must be a:

(1) Citizen of the United States;

(2) Resident alien, which for purposes of this subpart means "lawful alien" as defined in part 1400 of this title;

(3) Partnership organized under State Law;

(4) Corporation, limited liability company, or other organizational structure organized under State law;

(5) Indian Tribe or Tribal organization, as defined in section 4(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304); or

<sup>2</sup> The term "Armed Forces" means the United States Army, Navy, Marine Corps, Air Force, Space Force, and Coast Guard, including the reserve components.

<sup>3</sup> The term "veteran" means a person who served in the active military, naval, air, or space service, and who was discharged or released under conditions other than dishonorable.

<sup>1</sup> Limited resource farmer or rancher status can be determined using a website available through the Limited Resource Farmer and Rancher Online Self Determination Tool through Natural Resources Conservation Service at <https://lrftool.sc.gov.usda.gov>.

(6) Foreign person or foreign entity who meets all requirements as described in 7 CFR part 1400.

**§ 9.304 Allowable gross revenue.**

(a) For the purposes of this subpart, “allowable gross revenue” includes revenue from:

- (1) Sales of agricultural commodities produced by the producer, including sales resulting from value added through post-production activities;
  - (2) Sales of agricultural commodities a producer purchased for resale that had a change in characteristic due to the time held (for example, a plant purchased at a size of 2 inches and sold as an 18-inch plant after 4 months), less the cost or other basis of such commodities;
  - (3) The taxable amount of cooperative distributions directly related to the sale of the agricultural commodities produced by the producer;
  - (4) Benefits under the following agricultural programs: ARC and PLC, BCAP, DMC, LDP, MFP, MLG, and MPP-Dairy;
  - (5) CCC loans, if treated as income and reported to IRS;
  - (6) Crop insurance proceeds;
  - (7) Federal disaster program payments under the following programs: 2017 WHIP, ELAP, LFP, LIP, NAP, Milk Loss Program, On-Farm Storage Loss Program, STRP, TAP, and WHIP+;
  - (8) Payments issued through grant agreements with FSA for losses of agricultural commodities;
  - (9) Grants from the Department of Commerce, National Oceanic and Atmospheric Administration and State program funds providing direct payments for the loss of agricultural commodities or the loss of revenue from agricultural commodities;
  - (10) Revenue from raised breeding livestock;
  - (11) Revenue earned as a cattle feeder operation;
  - (12) Other revenue directly related to the production of agricultural commodities that IRS requires the producer to report as income and
  - (13) For 2020 allowable gross revenue, payments PMVAP regardless of the calendar year in which the payment was received.
- (b) Allowable gross revenue does not include revenue from sources other than those listed in paragraph (a) of this section, including but not limited to, revenue from:
- (1) Applicable pandemic assistance;
  - (2) Sales of commodities that are excluded from “agricultural commodities,”
  - (3) Resale items not held for characteristic change;

(4) Income from a pass-through entity such as an S Corp or limited liability company;

- (5) Conservation program payments;
  - (6) Any pandemic assistance payments that were not intended to compensate for the loss of agricultural commodities or the loss of revenue from agricultural commodities due to the pandemic (for example, payments to provide assistance with the cost of purchasing personal protective equipment, retrofitting facilities for worker and consumer safety, shifting to online sales platforms, transportation, worker housing, or medical costs);
  - (7) Custom hire income;
  - (8) Net gain from hedging or speculation;
  - (9) Wages, salaries, tips, and cash rent;
  - (10) Rental of equipment or supplies; and
  - (11) Acting as a contract producer of an agricultural commodity.
- (c) If a producer did not have a full year of revenue for 2018 or 2019, or increased their production capacity in 2020 compared to 2018 or 2019, the producer may certify to an adjusted 2018 or 2019 allowable gross revenue on form FSA-1122A. Increases in production capacity do not include changes due to crop rotation from year to year, changes in farming practices such as converting from conventional tillage to no-till, or increasing the rate of fertilizers or chemicals. Documentation required to support such an adjustment must be provided within 30 calendar days of submitting their PARP application and demonstrate that the producer:
- (1) Had the production capacity to support the expected full year revenue;
  - (2) Added production capacity to the farming operation;
  - (3) Increased the use of existing production capacity; or
  - (4) Made physical alterations to existing production capacity.
- (d) If a producer did not have allowable gross revenue in 2018 and 2019, the producer must certify on form FSA-1122A as to what had been their reasonably expected 2020 allowable gross revenue prior to the impact of the COVID-19 pandemic. Documentation required to support the producer’s certification must be provided within 30 calendar days of submitting the producer’s PARP application. Acceptable documentation must be generated in the ordinary course of business and dated prior to the impact of the COVID-19 pandemic and includes, but is not limited to:
- (1) Financial documents such as a business plan or cash flow statement

that demonstrate an expected level of revenue;

- (2) Sales contracts or purchase agreements; and
  - (3) Documentation supporting production capacity, use of existing production capacity, or physical alterations that demonstrate production capacity.
- (e) A producer who does not provide acceptable documentation described in paragraph (c) or (d) of this section within 30 calendar days of submitting their application is not eligible for an adjustment to their 2019 allowable gross revenue or to have their payment calculated using an expected 2020 allowable gross revenue, as applicable.
- (f) Except as provided in paragraph (a)(13) of this section, the allowable gross revenue for a specific calendar year will be based on the calendar year in which that revenue was received by the producer.
- (g) Producers who file or would file a joint tax return will certify their allowable gross revenue based on what it would have been had they filed taxes separately for the applicable year.

**§ 9.305 Time and method of application.**

- (a) A completed PARP application under this subpart must be submitted to any FSA county office by the close of business on the date announced by the Deputy Administrator. Applications may be submitted in person or by mail, email, facsimile, or other methods announced by FSA.
- (b) Failure of an individual, entity, or a member of an entity to submit the following payment limitation and payment eligibility forms within 60 days from the PARP application deadline, may result in no payment or a reduced payment:
- (1) Form AD-2047, Customer Data Worksheet, for new customers or existing customers who need to update their customer profile;
  - (2) Form FSA-1122A, PARP Application, if applicable;
  - (3) Form CCC-860, Socially Disadvantaged, Limited Resource, Beginning and Veteran Farmer or Rancher Certification, if applicable;
  - (4) Form CCC-901, Member Information for Legal Entities, if applicable;
  - (5) Form CCC-902 Farm Operating Plan for an individual or legal entity as provided in 7 CFR part 1400;
  - (6) Form CCC-941, Average Adjusted Gross Income (AGI) Certification and Consent to Disclosure of Tax Information, for the 2020 program year for the person or legal entity, including the legal entity’s members, partners, or shareholders, as provided in 7 CFR part 1400;

(7) Form FSA-1123, Certification of 2020 Adjusted Gross Income (AGI), if applicable; and

(8) Form AD-1026, Highly Erodible Land Conservation (HELIC) and Wetland Conservation (WC) Certification, for the PARP applicant and applicable affiliates as provided in 7 CFR part 12.

(c) If requested by USDA, the producer must provide additional documentation that establishes the producer's eligibility for PARP. If supporting documentation is requested, the documentation must be submitted to USDA within 30 calendar days from the request or the application will be disapproved by USDA. FSA may request supporting documentation to verify information provided by the producer and their eligibility including, but not limited to, the producer's:

(1) Allowable gross revenue reported on the PARP application; and

(2) Ownership share in the agricultural commodities.

#### **§ 9.306 Payment calculation.**

(a) If the producer's allowable gross revenue for 2020 decreased by at least 15 percent compared to the producer's allowable gross revenue for 2018 or 2019, as elected by the producer:

(1) FSA will calculate:

(i) The producer's 2018 or 2019 allowable gross revenue, as elected by the producer and as adjusted according to § 9.304(c), if applicable; minus

(ii) The producer's 2020 allowable gross revenue; multiplied by

(iii) A payment factor of:

(A) Ninety (90) percent for underserved farmers or ranchers, who have submitted form CCC-860 certifying they meet the definition for at least one of the applicable groups; or

(B) Eighty (80) percent for all other producers; and

(2) The producer's PARP payment will be equal to the result of the calculation in paragraph (a)(1) of this section minus the producer's applicable pandemic assistance, and 2020 program year ERP payments.

(b) If a producer did not have allowable gross revenue in 2018 and 2019 and the producer's allowable gross revenue for 2020 decreased by at least 15 percent compared to the producer's expected 2020 allowable gross revenue:

(1) FSA will calculate:

(i) The producer's expected 2020 allowable gross revenue, as specified in § 9.304(d), minus

(ii) The producer's actual 2020 allowable gross revenue;

(iii) Multiplied by a payment factor of:

(A) 90 percent for underserved farmers or ranchers who have submitted form CCC-860 certifying they meet the

definition for at least one of the applicable groups; or

(B) 80 percent for all other producers; and

(2) The producer's PARP payment will be equal to the result of the calculation in paragraph (b)(1) of this section minus the producer's applicable pandemic assistance, and 2020 program year ERP payments.

(c) If a producer receives assistance through 2020 program year ERP or any program included under applicable pandemic assistance after their PARP payment is calculated, their PARP payment will be recalculated and the producer must refund any resulting overpayment.

(d) Payments calculated according to this section are subject to the availability of funds and may be factored if total calculated payments exceed the available funding.

#### **§ 9.307 Adjusted gross income limitation, payment limitation, and attribution.**

(a) To be eligible to receive a PARP payment and facilitate administration of paragraphs (b) through (f) of this section, a person or legal entity must provide their name, address, valid taxpayer identification number, and ownership share to USDA. In addition, a legal entity must provide the name, address, valid taxpayer identification number, and ownership share of each person or legal entity, that holds or acquires a direct or indirect ownership interest in the legal entity. PARP payments to a legal entity will be reduced in proportion to a member's ownership share when a valid taxpayer identification number for a person or legal entity that holds less than a 10 percent direct or indirect ownership interest, at or above the fourth level of ownership in the business structure, is not provided to USDA. Additionally, a legal entity will not be eligible to receive PARP payments when a valid taxpayer identification number for a person or legal entity that holds a direct or indirect ownership interest of 10 percent or greater, at or above the fourth level of ownership in the business structure, is not provided to USDA.

(b) The \$900,000 average adjusted gross income limitation provisions in 7 CFR part 1400 relating to limits on income for persons or legal entities, including members of legal entities, joint ventures, and general partnerships applies to PARP. The average adjusted gross income will be calculated for a person or legal entity based on the 2016, 2017, and 2018 tax years. If the person's or legal entity's average adjusted gross income exceeds \$900,000, the applicant is ineligible for PARP except as

provided in paragraph (c) of this section.

(c) A person or legal entity that does not meet the average adjusted gross income requirements described in paragraph (b) of this section, may otherwise meet the adjusted gross income requirements, provided the person's or legal entity's 2020 adjusted gross income, as defined under 26 U.S.C. 62 or comparable measure, is not more than \$900,000. Except for general partnerships and joint ventures, a PARP applicant that is a person or legal entity, including members holding an ownership interest in the legal entity, is required to:

(1) Certify, on a form that is approved for that purpose by the Deputy Administrator, that their 2020 adjusted gross income or comparable measure is not more than \$900,000; and

(2) Submit a certification from a licensed CPA or attorney affirming the person's or legal entity's 2020 adjusted gross income is not more than \$900,000.

(d) Members of general partnerships and joint ventures not meeting the income requirements described in paragraph (b) of this section may otherwise meet the income requirements, provided the member's 2020 adjusted gross income, as defined under 26 U.S.C. 62 or comparable measure, is not more than \$900,000. The member is required to provide the information described in paragraphs (c)(1) and (2) of this section.

(e) A person or legal entity other than a joint venture or general partnership cannot receive, directly or indirectly, more than \$125,000 under PARP. USDA may establish a lower maximum payment amount per person, legal entity, or member of a joint venture or general partnership after the application period has ended if calculated payment amounts exceed available funding. Payments made to a PARP applicant who is a joint operation, including a joint venture or a general partnership, may not exceed the amount determined by multiplying \$125,000 (or the reduced maximum payment limitation, if applicable) by the number of persons or legal entities that comprise the first-level membership of the joint operation.

(f) A PARP payment made to a legal entity will be considered in combination with other PARP payments attributed to every person or legal entity with a direct or indirect ownership interest in the legal entity. The maximum limitation described in paragraph (e) of this section for a legal entity is determined based on payments to the legal entity and members who are an individual person or a legal entity. If a member's combined PARP payments

reach the maximum payment limitation when summed from all businesses in which the person or legal entity has an ownership interest, then subsequent payments to the legal entity will be reduced by the proportionate ownership interest of the member. A payment to a legal entity will be attributed to those members who have a direct or indirect ownership interest in the legal entity, unless the payment of the legal entity has been reduced by the proportionate ownership interest of the member due to that member's ineligibility. Attribution of payments made to legal entities will be tracked through four levels of ownership in legal entities as follows:

(1) *First level of ownership*: Any payment made to a legal entity that is owned in whole or in part by a person will be attributed to the person in an amount that represents the direct ownership interest in the first-level or payment legal entity;

(2) *Second level of ownership*: Any payment made to a first-level legal entity that is owned in whole or in part by another legal entity (referred to as a second-level legal entity) will be attributed to the second-level legal entity in proportion to the ownership of the second-level legal entity in the first-level legal entity; if the second-level legal entity is owned in whole or in part by a person, the amount of the payment made to the first-level legal entity will be attributed to the person in the amount that represents the indirect ownership in the first-level legal entity by the person;

(3) *Third and fourth levels of ownership*: Except as provided in the second-level ownership in paragraph (f)(2) of this section and in the fourth level of ownership in paragraph (f)(4) of this section, any payments made to a legal entity at the third and fourth levels of ownership will be attributed in the same manner as specified in paragraph (f)(2) of this section; and

(4) *Fourth-level of ownership*: If the fourth level of ownership is that of a legal entity and not that of a person, a reduction in payment will be applied to the first-level or payment legal entity in the amount that represents the indirect ownership in the first level or payment legal entity by the fourth-level legal entity.

(g) Payments made to a PARP applicant that is an Indian Tribe or Tribal organization, as defined in the section 4(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304), are not subject to:

(1) AGI requirements described in paragraphs (b) through (d) of this section;

(2) Payment limitation described in paragraph (e) of this section; and  
(3) Attribution of payments described in paragraph (f) of this section.

(h) Payments made directly or indirectly to a person who is a minor child will not be combined with the earnings of the minor child's parent or legal guardian.

#### **§ 9.308 Eligibility subject to verification.**

(a) Producers who are approved for participation in PARP are required to retain documentation in support of their application for 3 years after the date of approval.

(b) Participants receiving PARP payments must permit authorized representatives of USDA or the Government Accountability Office, during regular business hours, to enter the agricultural operation and to inspect, examine, and to allow representatives to make copies of books, records, or other items for the purpose of confirming the accuracy of the information provided by the participant.

#### **§ 9.309 Miscellaneous provisions.**

(a) If a PARP payment resulted from erroneous information provided by a producer, or any person acting on their behalf, the payment will be recalculated and the producer must refund any excess payment with interest calculated from the date of the disbursement of the payment.

(b) If FSA determines that the producer intentionally misrepresented information provided on their application, the application will be disapproved and the producer must refund the full payment to FSA with interest from the date of disbursement.

(c) Any required refunds must be resolved in accordance with part 3 of this title.

(d) The regulations in 7 CFR part 718, subpart D, and 7 CFR parts 11 and 780 apply to determinations made under this subpart.

(e) A producer, whether a person or legal entity that either fails to timely provide all required documentation or fails to satisfy any eligibility requirement for PARP, is not eligible to receive PARP payments, directly or indirectly. A PARP payment to an eligible legal entity applicant whose member(s) either fails to timely provide all required documentation or fails to satisfy any eligibility requirement for PARP will be reduced proportionate to that member's ownership interest in the legal entity.

(f) Any payment under this subpart will be made without regard to questions of title under State law and without regard to any claim or lien

against the commodity or proceeds from the sale of the commodity. The regulations governing offsets in part 3 of this title do not apply to payments made under this subpart.

(g) For the purposes of the effect of a lien on eligibility for Federal programs (28 U.S.C. 3201(e)), USDA waives the restriction on receipt of funds under PARP but only as to beneficiaries who, as a condition of the waiver, agree to apply the PARP payments to reduce the amount of the judgment lien.

(h) The provisions in 7 CFR 718.3, 718.4, 718.5, 718.6, 718.8, 718.9, 718.10, and 718.11 are applicable to multiple programs and apply to PARP.

(i) In addition to any other Federal laws that apply to PARP, the following laws apply: 15 U.S.C. 714; 18 U.S.C. 286, 287, 371, and 1001.

#### **§ 9.310 Perjury.**

In either applying for or participating in PARP, or both, the producer is subject to laws against perjury and any resulting penalties and prosecution, including, but not limited to, 18 U.S.C. 1621. If the producer willfully makes and represents as true any verbal or written declaration, certification, statement, or verification that the producer knows or believes not to be true, in the course of either applying for or participating in PARP, or both, then the producer may be guilty of perjury and, except as otherwise provided by law, may be fined, imprisoned for not more than 5 years, or both, regardless of whether the producer makes such verbal or written declaration, certification, statement, or verification within or without the United States.

### **PART 701—EMERGENCY CONSERVATION PROGRAM, EMERGENCY FOREST RESTORATION PROGRAM, AND CERTAIN RELATED PROGRAMS PREVIOUSLY ADMINISTERED UNDER THIS PART**

■ 15. The authority citation for part 701 continues to read as follows:

**Authority:** 16 U.S.C. 2201–2206; Sec. 101, Pub. L. 109–148, 119 Stat. 2747; and Pub. L. 111–212, 124 Stat. 2302.

#### **Subpart A—General**

■ 16. Amend § 701.2 in paragraph (b) as follows:

- a. Remove the definition of “Commercial forest land”;
- b. Add the definition of “Forestland” in alphabetical order;
- c. In a definition for “Nonindustrial private forest land”, remove the words “commercial forest”; and

■ d. Add a definition for “Socially disadvantaged farmer or rancher” in alphabetical order.

The additions read as follows:

**§ 701.2 Abbreviations and definitions.**

\* \* \* \* \*

(b) \* \* \*

*Forestland* means land that is at least 120 feet wide and 1 acre in size and at least 10 percent covered by live trees of any size.

\* \* \* \* \*

*Socially disadvantaged farmer or rancher* means a farmer or rancher who is a member of a socially disadvantaged group. A socially disadvantaged group is a group whose members have been subjected to racial or ethnic prejudice because of their identity as members of a group without regard to their individual qualities.

**§§ 701.44 and 701.45 [Removed and Reserved]**

■ 17. Remove and reserve §§ 701.44 and 701.45.

**Subpart B—Emergency Conservation Program**

■ 18. Amend § 701.105 as follows:

■ a. Remove paragraphs (b)(1) and (2);

■ b. Redesignate paragraphs (b)(3) through (13) as paragraphs (b)(1) through (11), respectively;

■ c. Add paragraph (d).

The addition reads as set forth below.

**§ 701.105 Land eligibility.**

\* \* \* \* \*

(d) Additional provisions making Government-owned land eligible is specified in § 701.106.

■ 19. Add § 701.106 to read as follows:

**§ 701.106 Government-owned land.**

(a) *State-owned land*. When land is owned by a State, whether it is eligible for cost share is as specified in this paragraph (a) in addition to the requirements in § 701.105.

(1) If an eligible person or legal entity has a lease for the State-owned land that allows cost share, and files a cost share request for the State-owned land, the land is eligible for cost share if, as determined by FSA, the:

(i) Eligible person or legal entity will directly benefit from the practice; or

(ii) The land will remain in agricultural production throughout the established practice life span.

(2) If an eligible person or legal entity files a cost-share request for State-owned land, the land is ineligible for cost share if, as determined by FSA, the:

(i) Practice is for the primary benefit of the State or State agencies; or

(ii) Eligible person or legal entity is prohibited by the lease from accepting cost-share.

(b) *Federally-owned farmland*. When land is federally owned, whether it is eligible for cost-share is as specified in this paragraph (a), in addition to the requirements in § 701.105.

(1) If an eligible person or legal entity files a cost-share request on federally owned farmland, the land is eligible if all of the following apply:

(i) An eligible private person or legal entity is farming or ranching the farmland;

(ii) An eligible person or legal entity has a lease that does not prohibit cost-share;

(iii) The practice will primarily benefit nearby or adjacent privately owned farmland of the eligible person or legal entity performing the practice;

(iv) A person or legal entity performing the practice has authorization from a Federal agency to install and maintain the practice;

(v) The Federal land is the most practical location for the eligible practice; and

(vi) During a drought, the practice will primarily benefit the livestock owned or managed by the eligible person or legal entity performing the practice.

(2) If an eligible person or legal entity files a cost share request on federally-owned land, the land is ineligible if the practices performed on these lands are for the benefit of land owned by a Federal agency.

(c) *Federal or State agency*. For the purposes of this subpart, private persons or legal entities exclude Federal and State agencies.

■ 20. Amend § 701.111 by revising paragraph (a) to read as follows:

**§ 701.111 Prohibition on duplicate payments.**

(a) *Duplicate payments*. Participants are not eligible to receive funding under ECP on the same piece of land for which the participant has or will receive funding under any other Federal or State program that covers the same or similar expenses so as to create duplicate payments, or, in effect, a higher rate of cost share than is allowed under this part.

\* \* \* \* \*

■ 21. Amend § 701.126 by adding paragraph (d) to read as follows.

**§ 701.126 Maximum cost-share percentages.**

\* \* \* \* \*

(d) The Secretary may waive the maximum limitations described in

paragraphs (a) through (c) of this section to the maximum extent allowed by law.

■ 22. Amend § 701.127 by designating the undesignated paragraph as paragraph (a) and adding paragraph (b) to read as follows.

**§ 701.127 Maximum ECP payments per person or legal entity.**

\* \* \* \* \*

(b) The Secretary may waive the maximum limitations described in paragraph (a) of this section to the maximum extent allowed by law.

■ 23. Amend § 701.128 by revising the section heading and paragraph (a) to read as follows.

**§ 701.128 Advance payment.**

(a) With respect to a payment to an agricultural producer for any eligible ECP practice, the agricultural producer has the option of receiving up to 25 percent of the projected payment, determined based on the applicable percentage of the fair market value of the cost of the practice, as determined by FSA, before the agricultural producer carries out the restoration.

\* \* \* \* \*

**§§ 701.150 through 701.157 [Removed]**

■ 25. Remove §§ 701.150 through 701.157.

**Subpart C—Emergency Forest Restoration Program**

■ 26. Amend § 701.226 by adding paragraph (c) to read as follows.

**§ 701.226 Maximum cost-share percentages.**

\* \* \* \* \*

(c) The Secretary may waive the maximum limitations described in paragraphs (a) and (b) of this section to the maximum extent allowed by law.

**Farm Service Administration**

**Chapter VII**

**PART 760—INDEMNITY PAYMENT PROGRAMS**

■ 27. The authority citation for part 760 is revised to read as follows:

**Authority:** 7 U.S.C. 4501 and 1531; 16 U.S.C. 3801, note; 19 U.S.C. 2497; Title III, Pub. L. 109–234, 120 Stat. 474; Title IX, Pub. L. 110–28, 121 Stat. 211; Sec. 748, Pub. L. 111–80, 123 Stat. 2131; Title I, Pub. L. 115–123, 132 Stat. 65; Title I, Pub. L. 116–20, 133 Stat. 871; Division B, Title VII, Pub. L. 116–94, 133 Stat. 2658; and Division B, Title I, Pub. L. 117–43, 135 Stat. 344.

■ 28. Add subpart S to read as follows.

**Subpart S—Emergency Relief Program**

Sec.

760.1900 Applicability and administration.  
 760.1901 Definitions.  
 760.1902 Producer eligibility requirements.  
 760.1903 Allowable gross revenue.  
 760.1904 Time and method of application.  
 760.1905 Payment calculation.  
 760.1906 Payment limitation and attribution.  
 760.1907 Eligibility subject to verification.  
 760.1908 Miscellaneous provisions.  
 760.1909 Perjury.  
 760.1910 Requirement to purchase crop insurance or NAP coverage.

### Subpart S—Emergency Relief Program

#### § 760.1900 Applicability and administration.

(a) This subpart specifies the eligibility requirements and payment calculations for Phase 2 of the Emergency Relief Program (ERP). ERP provides payments to producers who suffered eligible crop losses due to qualifying disaster events, which include wildfires, hurricanes, floods, derechos, excessive heat, winter storms, freeze (including a polar vortex), smoke exposure, excessive moisture, qualifying drought, and related conditions occurring in calendar years 2020 and 2021.<sup>1</sup> To be eligible for ERP Phase 2 payments, participants must comply with all provisions under this subpart.

(b) ERP is administered under the general supervision and direction of the Administrator, Farm Service Agency (FSA).

(c) The FSA State committee will take any action required by this subpart that an FSA county committee has not taken. The FSA State committee will also:

(1) Correct, or require an FSA county committee to correct, any action taken by such county FSA committee that is not in accordance with the regulations of this subpart; or

(2) Require an FSA county committee to withhold taking any action that is not in accordance with this subpart.

(d) No provision or delegation to an FSA State or county committee will preclude the FSA Administrator, the Deputy Administrator, or a designee or other such person, from determining any question arising under the programs of this subpart, or from reversing or modifying any determination made by an FSA State or county committee.

(e) The Deputy Administrator has the authority to permit State and county committees to waive or modify deadlines (except deadlines specified in a law) and other requirements or program provisions not specified in law,

in cases where lateness or failure to meet such other requirements or program provisions do not adversely affect operation of ERP.

#### § 760.1901 Definitions.

The following definitions apply to this subpart. The definitions in parts 718 and 1400 of this title apply, except where they conflict with the definitions in this section.

*2017 WHIP* means the 2017 Wildfires and Hurricanes Indemnity Program under 7 CFR part 760, subpart O.

*Administrative fee* means the amount an insured producer paid for catastrophic risk protection, and additional coverage for each crop year as specified in the applicable crop insurance policy.

*Application* means the ERP Phase 2 application form.

*Aquaculture* means any species of aquatic organisms grown as food for human or livestock consumption or for industrial or biomass uses, fish raised as feed for fish that are consumed by humans, and ornamental fish propagated and reared in an aquatic medium. Eligible aquacultural species must be raised by a commercial operator and in water in a controlled environment.

*ARC and PLC* means the Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC) programs under 7 CFR part 1412.

*Average adjusted gross farm income* means the average of the person or legal entity's adjusted gross income derived from farming, ranching, or forestry operations for the 3 taxable years preceding the most immediately preceding complete taxable year.

(1) If the resulting average adjusted gross farm income is at least 66.66 percent of the average adjusted gross income of the person or legal entity, then the average adjusted gross farm income may also take into consideration income or benefits derived from the following:

(i) The sale of equipment to conduct farm, ranch, or forestry operations; and  
 (ii) The provision of production inputs and services to farmers, ranchers, foresters, and farm operations.

(2) The relevant tax years are:

(i) For the 2020 program year, 2016, 2017, and 2018; and

(ii) For the 2021 program year, 2017, 2018, and 2019.

*Average adjusted gross income* means the average of the adjusted gross income as defined under 26 U.S.C. 62 or comparable measure of the person or legal entity. The relevant tax years are:

(1) For the 2020 program year, 2016, 2017, and 2018; and

(2) For the 2021 program year, 2017, 2018, and 2019.

*BCAP* means the Biomass Crop Assistance Program under 7 CFR part 1450.

*Beginning farmer or rancher* means a farmer or rancher who has not operated a farm or ranch for more than 10 years and who materially and substantially participates in the operation. For a legal entity to be considered a beginning farmer or rancher, at least 50 percent of the interest must be beginning farmers or ranchers.

*Benchmark revenue* means allowable gross revenue for the benchmark year. If a producer began farming in 2020 or 2021 and did not have allowable gross revenue in either 2018 or 2019, the benchmark revenue is the producer's reasonably expected allowable gross revenue for the disaster year prior to the impact of the qualifying disaster event.

*Benchmark year* means the 2018 or 2019 tax year, as elected by the producer.

*Buy-up NAP coverage* means NAP coverage at a payment amount that is equal to an indemnity amount calculated for buy-up coverage computed under section 508(c) or (h) of the Federal Crop Insurance Act and equal to the amount that the buy-up coverage yield for the crop exceeds the actual yield for the crop.

*Catastrophic coverage* has the same meaning as in 7 CFR 1437.3.

*CCC* means the Commodity Credit Corporation.

*Certifying agent* means a private or governmental entity accredited by the USDA Secretary for the purpose of certifying a production, processing, or handling operation as organic.

*CFAP* means the Coronavirus Food Assistance Program 1 and 2 under 7 CFR part 9, subparts A through C, excluding assistance for contract producers specified in § 9.203(l) through (o).

*Controlled environment* means an environment in which everything that can practicably be controlled by the producer with structures, facilities, and growing media (including but not limited to water, soil, or nutrients), is in fact controlled by the producer, as determined by industry standards.

*County* means the county or parish of a state. For Alaska, Puerto Rico, and the Virgin Islands, a county is an area designated by the State committee with the concurrence of the Deputy Administrator.

*County committee* means the FSA county committee.

*Coverage level* means the percentage determined by multiplying the elected yield percentage under a crop insurance

<sup>1</sup> ERP Phase 1 was administered according to the notice of funds availability published in the *Federal Register* on May 18, 2022 (87 FR 30164–30172). A clarification to the notice of funds availability for ERP Phase 1 was published on August 18, 2022 (87 FR 50828–50830).



policy or NAP coverage by the elected price percentage.

*Crop insurance* means an insurance policy reinsured by the Federal Crop Insurance Corporation under the provisions of the Federal Crop Insurance Act, as amended.

*Crop insurance indemnity* means the payment to a participant for crop losses covered under crop insurance administered by RMA in accordance with the Federal Crop Insurance Act (7 U.S.C. 1501–1524).

*Deputy Administrator* means Deputy Administrator for Farm Programs, Farm Service Agency, U.S. Department of Agriculture, or their designee.

*Direct market crop* means a crop sold directly to consumers without the intervention of an intermediary such as a registered handler, wholesaler, retailer, packer, processor, shipper, or buyer (for example, a crop sold at a farmer's market or roadside stand), excluding crops sold for livestock consumption.

*Disaster year* means the calendar year in which the qualifying disaster event occurred (that is, 2020 or 2021).

*Disaster year revenue* means the allowable gross revenue for:

- (1) The 2020 or 2021 tax year, as elected by the producer, for the 2020 disaster year; and
- (2) The 2021 or 2022 tax year, as elected by the producer, for the 2021 disaster year.

(3) Producers must choose consecutive tax years if they are applying for both the 2020 and 2021 disaster years (that is, they may choose 2020 tax year revenue for the 2020 disaster year, and 2021 tax year revenue for the 2021 disaster year; or they may choose 2021 tax year revenue for the 2020 disaster year, and 2022 tax year revenue for the 2021 disaster year).

*ELAP* means the Emergency Assistance for Livestock, Honeybees, and Farm-Raised Fish Program under part 1416, subpart B, of this title.

*Eligible crop* means a crop, including eligible aquaculture, that is produced in the United States as part of a farming operation and is intended to be commercially marketed. It excludes:

- (1) Crops for grazing;
- (2) Aquatic species that do not meet the definition of aquaculture;
- (3) *Cannabis sativa* L. and any part of that plant that does not meet the definition of hemp; and
- (4) Timber.

*Farming operation* means a business enterprise engaged in the production of agricultural products, commodities, or livestock, operated by a person, legal entity, or joint operation, and that is eligible to receive payments, directly or

indirectly, under this subpart. A person or legal entity may have more than one farming operation if the person or legal entity is a member of one or more legal entity or joint operation.

*FCIC* means the Federal Crop Insurance Corporation, a wholly owned Government Corporation of USDA, administered by RMA.

*Hemp* means the plant species *Cannabis sativa* L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta-9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis, that is grown under a license or other required authorization issued by the applicable governing authority that permits the production of the hemp.

*High value crop* means:

(1) Any eligible crop not specifically identified as a specialty crop or listed in the definition of "other crop"; and

(2) Any eligible crop, regardless of whether it is identified as a specialty crop or listed in the definition of "other crop," if the crop is a direct market crop, organic crop, or a crop grown for a specific market in which specialized products can be sold resulting in an increased value compared to the typical market for the crops (for example, soybeans intended for tofu production), as determined by the Deputy Administrator.

*Income derived from farming, ranching, and forestry operations* means income of an individual or entity derived from:

(1) Production of crops, specialty crops, and unfinished raw forestry products;

(2) Production of livestock, aquaculture products used for food, honeybees, and products derived from livestock;

(3) Production of farm-based renewable energy;

(4) Selling (including the sale of easements and development rights) of farm, ranch, and forestry land, water or hunting rights, or environmental benefits;

(5) Rental or lease of land or equipment used for farming, ranching, or forestry operations, including water or hunting rights;

(6) Processing, packing, storing, and transportation of farm, ranch, forestry commodities including renewable energy;

(7) Feeding, rearing, or finishing of livestock;

(8) Payments of benefits, including benefits from risk management

practices, crop insurance indemnities, and catastrophic risk protection plans;

(9) Sale of land that has been used for agricultural purposes;

(10) Payments and benefits authorized under any program made available and applicable to payment eligibility and payment limitation rules;

(11) Income reported on Internal Revenue Service (IRS) Schedule F or other schedule used by the person or legal entity to report income from such operations to the IRS;

(12) Wages or dividends received from a closely held corporation, Interest Charge Domestic International Sales Corporation (IC-DISC), or legal entity comprised entirely of family members when more than 50 percent of the legal entity's gross receipts for each tax year are derived from farming, ranching, or forestry activities as defined in this document; and

(13) Any other activity related to farming, ranching, and forestry, as determined by the Deputy Administrator.

*IRS* means the Department of Treasury, Internal Revenue Service.

*LDP* means the Loan Deficiency Payment programs in 7 CFR parts 1421, 1425, 1427, 1434, and 1435.

*Legal entity* means a corporation, joint stock company, association, limited partnership, irrevocable trust, estate, charitable organization, or other similar organization including any such organization participating in a business structure as a partner in a general partnership, a participant in a joint venture, a grantor of a revocable trust, or as a participant in a similar organization. A business operating as a sole proprietorship is considered a legal entity.

*Limited resource farmer or rancher* means a farmer or rancher:

(1) Who is a person whose:

(i) Direct or indirect gross farm sales did not exceed:

(A) \$180,300 in each calendar year for 2017 and 2018 (the relevant years for the 2020 program year); or

(B) \$179,000 in each of the 2018 and 2019 calendar years for the 2021 program year;

and

(ii) Total household income was at or below the national poverty level for a family of four in each of the same two previous years referenced in paragraph (1)(i) of this definition;<sup>1</sup> or

<sup>1</sup> Limited resource farmer or rancher status can be determined using a website available through the Limited Resource Farmer and Rancher Online Self Determination Tool through Natural Resources Conservation Service at <https://lrftool.sc.egov.usda.gov>.

(2) That is an entity and all members who hold an ownership interest in the entity meet the criteria in paragraph (1) of this definition.

*LFP* means the Livestock Forage Disaster Program under CFR part 1416, subpart C.

*MLG* means marketing loan gains under the Marketing Assistance Loan program provisions in 7 CFR parts 1421, 1425, 1427, 1434, and 1435.

*Minor child* means a person who is under 18 years of age as of June 1, 2020.

*MFP* means the 2018 Market Facilitation Program under 7 CFR part 1409, subpart A, and the 2019 Market Facilitation Program under 7 CFR part 1409, subpart B.

*NAP* means the Noninsured Crop Disaster Assistance Program under section 196 of the Federal Agriculture Improvement and Reform Act of 1996 (7 U.S.C. 7333) and 7 CFR part 1437.

*On-Farm Storage Loss Program* means the On-Farm Storage Loss Program under 7 CFR part 760, subpart P.

*Organic crop* means a crop that is organically produced consistent with section 2103 of the Organic Foods Production Act of 1990 (7 U.S.C. 6502) and grown on acreage certified by a certifying agent as conforming to organic standards specified in 7 CFR part 205.

*Other crop* means cotton, peanuts, rice, feedstock, and any crop grown with an intended use of grain, silage, or forage, unless the crop meets the requirements in paragraph (2) of the definition of “high value crop.”

*Ownership interest* means to have either legal ownership interest or beneficial ownership interest in a legal entity. For the purposes of administering ERP Phase 2, a person or legal entity that owns a share or stock in a legal entity that is a corporation, limited liability company, limited partnership, or similar type entity where members hold a legal ownership interest and shares in the profits or losses of such entity is considered to have an ownership interest in such legal entity. A person or legal entity that is a beneficiary of a trust or heir of an estate who benefits from the profits or losses of such entity is also considered to have a beneficial ownership interest in such legal entity.

*Person* means an individual, natural person and does not include a legal entity.

*Premium* means the premium paid by the producer for crop insurance coverage or NAP buy-up coverage levels.

*Producer* means a person or legal entity who was entitled to a share in the eligible crop available for marketing or

would have shared had the eligible crop been produced and marketed.

*Program year* means:

(1) For ERP Phase 2, the disaster year; and

(2) For all other programs, the program year as defined in the applicable program provisions.

*Qualifying disaster event* means wildfires, hurricanes, floods, derechos, excessive heat, winter storms, freeze (including a polar vortex), smoke exposure, excessive moisture, qualifying drought, and related conditions.

*Qualifying drought* means an area within the county was rated by the U.S. Drought Monitor as having a drought intensity of D2 (severe drought) for eight consecutive weeks or D3 (extreme drought) or higher level for any period of time during the applicable calendar year.

*Related condition* means damaging weather and adverse natural occurrences that occurred concurrently with and as a direct result of a specified qualifying disaster event. Related conditions include, but are not limited to:

(1) Excessive wind that occurred as a direct result of a derecho;

(2) Silt and debris that occurred as a direct and proximate result of flooding;

(3) Excessive wind, storm surges, tornados, tropical storms, and tropical depressions that occurred as a direct result of a hurricane; and

(4) Excessive wind and blizzards that occurred as a direct result of a winter storm.

*Socially disadvantaged farmer or rancher* means a farmer or rancher who is a member of a group whose members have been subjected to racial, ethnic, or gender prejudice because of their identity as members of a group without regard to their individual qualities. For entities, at least 50 percent of the ownership interest must be held by individuals who are members of such a group. Socially disadvantaged groups include the following and no others unless approved in writing by the Deputy Administrator:

(1) American Indians or Alaskan Natives;

(2) Asians or Asian-Americans;

(3) Blacks or African Americans;

(4) Hispanics or Hispanic Americans;

(5) Native Hawaiians or other Pacific Islanders; and

(6) Women.

*Specialty crops* means fruits, tree nuts, vegetables, culinary herbs and spices, medicinal plants, and nursery, floriculture, and horticulture crops. This includes common specialty crops identified by USDA’s Agricultural Marketing Service at [https://](https://www.ams.usda.gov/services/grants/scbgp/specialty-crop)

[www.ams.usda.gov/services/grants/scbgp/specialty-crop](https://www.ams.usda.gov/services/grants/scbgp/specialty-crop) and other crops as designated by the Deputy Administrator.

*Substantial beneficial interest (SBI)* has the same meaning as specified in the applicable crop insurance policy. For the purposes of ERP Phase 1, Federal crop insurance records for “transfer of coverage, right to indemnity” are considered the same as SBIs.

*STRP* means the Seafood Trade Relief Program announced in the notice of funds availability published on September 14, 2020 (85 FR 56572–56575).

*Underserved farmer or rancher* means a beginning farmer or rancher, limited resource farmer or rancher, socially disadvantaged farmer or rancher, or veteran farmer or rancher.

*United States* means all 50 States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, and any other territory or possession of the United States.

*U.S. Drought Monitor* means the system for classifying drought severity according to a range of abnormally dry to exceptional drought. It is a collaborative effort between Federal and academic partners, produced on a weekly basis, to synthesize multiple indices, outlooks, and drought impacts on a map and in narrative form. This synthesis of indices is reported by the National Drought Mitigation Center at <http://droughtmonitor.unl.edu>.

*Veteran farmer or rancher* means a farmer or rancher:

(1) Who has served in the Armed Forces (as defined in 38 U.S.C. 101(10)<sup>2</sup>) and:

(i) Has not operated a farm or ranch for more than 10 years; or

(ii) Has obtained status as a veteran (as defined in 38 U.S.C. 101(2)<sup>3</sup>) during the most recent 10-year period; or

(2) That is an entity and at least 50 percent of the ownership interest is held by members who meet the criteria in paragraph (1) of this definition.

*WHIP+* means the Wildfires and Hurricanes Indemnity Program Plus under 7 CFR part 760, subpart O.

#### **§ 760.1902 Producer eligibility requirements.**

(a) To be eligible for ERP Phase 2, a producer must have suffered a loss in

<sup>2</sup> The term “Armed Forces” means the United States Army, Navy, Marine Corps, Air Force, Space Force, and Coast Guard, including the reserve components.

<sup>3</sup> The term “veteran” means a person who served in the active military, naval, air, or space service, and who was discharged or released under conditions other than dishonorable.

disaster year allowable gross revenue, as compared to the benchmark allowable gross revenue, due to necessary expenses associated with losses of eligible crops due in whole or in part to a qualifying disaster event that occurred in the 2020 or 2021 calendar year.

(b) To be eligible for an ERP Phase 2 payment, a producer must be a:

- (1) Citizen of the United States;
- (2) Resident alien, which for purposes of this subpart means "lawful alien" as defined in part 1400 of this title;
- (3) Partnership organized under State Law;
- (4) Corporation, limited liability company, or other organizational structure organized under State law; or
- (5) Indian Tribe or Tribal organization, as defined in section 4(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304).

**§ 760.1903 Allowable gross revenue.**

(a) For the purposes of this subpart, "allowable gross revenue" includes revenue from:

- (1) Sales of eligible crops produced by the producer, which includes sales resulting from value added through post-production activities that were reportable on IRS Schedule F;
- (2) Sales of eligible crops a producer purchased for resale that had a change in characteristic due to the time held (for example, a plant purchased at a size of 2 inches and sold as an 18-inch plant after 4 months), less the cost or other basis of such eligible crops;
- (3) The taxable amount of cooperative distributions directly related to the sale of the eligible crops produced by the producer;
- (4) Benefits under the following agricultural programs: 2017 WHIP, ARC and PLC, BCAP, LDP, MLG, MFP, the On-Farm Storage Loss Program, and STRP;
- (5) CCC loans, if treated as income and reported to IRS;
- (6) Crop insurance proceeds for eligible crops, minus the amount of administrative fees and premiums;
- (7) NAP payments for eligible crops, minus the amount of service fees and premiums;
- (8) ELAP payments for an aquaculture crop;
- (9) Payments issued through grant agreements with FSA for losses of eligible crops;
- (10) Grants from the Department of Commerce, National Oceanic and Atmospheric Administration and State program funds providing direct payments for the loss of eligible crops or the loss of revenue from eligible crops;

(11) Other revenue directly related to the production of eligible crops that IRS requires the producer to report as income;

(12) For the disaster year only, ERP Phase 1 payments issued to another person or entity for the producer's share of an eligible crop, regardless of the tax year in which the payment would be reported to IRS; and

(13) For the benchmark year only, 2018, 2019 and 2020 WHIP+ and QLA payments.

(b) Allowable gross revenue does not include revenue from sources other than those listed in paragraph (a) of this section, including but not limited to, revenue from:

- (1) Federal assistance programs not included in paragraph (a) of this section;
- (2) Sales of livestock, animal by-products, and any commodities that are excluded from "eligible crops";
- (3) Resale items not held for characteristic change;
- (4) Income from a pass-through entity such as an S Corp or limited liability company;
- (5) Conservation program payments;
- (6) Any pandemic assistance payments that were not for the loss of eligible crops or the loss of revenue from eligible crops;
- (7) Custom hire income;
- (8) Net gain from hedging or speculation;
- (9) Wages, salaries, tips, and cash rent;
- (10) Rental of equipment or supplies; and
- (11) Acting as a contract producer of an agricultural commodity.

(c) A producer is required to certify to an adjusted allowable gross revenue for the benchmark year on FSA-521 if the producer had a decreased operation capacity in a disaster year for which they are applying for ERP Phase 2, compared to the benchmark year.

(d) A producer may certify to an adjusted allowable gross revenue for the benchmark year on FSA-521 if either of the following apply:

- (1) The producer did not have a full year of revenue for 2018 or 2019; or
- (2) The producer had expanded their operation capacity in a disaster year for which they are applying for ERP Phase 2, compared to the benchmark year.

(e) Change in operation capacity does not include crop rotation from year to year, changes in farming practices such as converting from conventional tillage to no-till, or increasing the rate of fertilizers or chemicals. If requested by FSA, producers are required to submit documentation to FSA to support adjustments described in paragraphs (c) and (d) of this section within 30

calendar days of the request. The documentation to support an adjustment due to a change in operation capacity must show that the adjustment to the producer's benchmark revenue is due to an:

- (1) Addition or decrease in production capacity of the farming operation;
  - (2) Increase or decrease in the use of existing production capacity; or
  - (3) Physical alterations that were made to existing production capacity.
- (f) If a producer began farming in 2020 or 2021 and did not have allowable gross revenue in a benchmark year, the producer may certify to an adjusted benchmark allowable gross revenue on form FSA-521 that represents what had been the producer's reasonably expected disaster year revenue prior to the impact of the qualifying disaster event. If requested by FSA, documentation required to support a producer's certification must be provided within 30 calendar days of FSA's request, or the producer will be considered ineligible for ERP Phase 2. Acceptable documentation must be generated in the ordinary course of business and dated prior to the impact of the disaster event and includes, but is not limited to:

- (1) Financial documents such as a business plan or cash flow statement that demonstrate an expected level of revenue;
- (2) Sales contracts or purchase agreements; and
- (3) Documentation supporting production capacity, use of existing production capacity, or physical alterations that demonstrate production capacity.

(g) The allowable gross revenue will be based on the year for which the revenue would be reported for the purpose of filing a tax return, except for the ERP Phase 1 payments specified in paragraph (a)(12) of this section.

(h) Producers who file or would be eligible to file a joint tax return will certify their allowable gross revenue based on what it would have been had they filed taxes separately for the applicable year.

(i) On form FSA-521, for each applicable disaster year, producers must indicate the percentage of their allowable gross revenue from specialty and high value crops and the percentage from other crops. The percentages certified must be equal to the percentages that the producer would have reasonably expected to receive for the disaster year if not for the qualifying disaster event.

**§ 760.1904 Time and method of application.**

(a) A completed FSA–521, Emergency Relief Program (ERP) Phase 2 Application, must be submitted to the producer's recording county office by the close of business on the date announced by the Deputy Administrator. Applications may be submitted in person or by mail, email, facsimile, or other methods announced by FSA.

(b) Failure of an individual, entity, or a member of an entity to submit the following payment limitation and payment eligibility forms within 60 days from the date of the ERP Phase 2 application deadline, may result in no payment or a reduced payment:

- (1) Form AD–2047, Customer Data Worksheet, for new customers or existing customers who need to update their customer profile;
- (2) Form CCC–860, Socially Disadvantaged, Limited Resource, Beginning and Veteran Farmer or Rancher Certification, applicable for the program year or years for which the producer is applying for ERP;
- (3) Form CCC–901, Member Information for Legal Entities, if applicable;
- (4) Form CCC–902, Farm Operating Plan for an individual or legal entity as provided in 7 CFR part 1400;
- (5) Form FSA–510, Request for an Exception to the \$125,000 Payment Limitation for Certain Programs, accompanied by a certification from a certified public accountant or attorney as to that person or legal entity's certification, for a legal entity and all members of that entity, for each applicable program year, including the legal entity's members, partners, or shareholders, as provided in 7 CFR part 1400; and

(6) Form AD–1026, Highly Erodible Land Conservation (HELC) and Wetland Conservation (WC) Certification, for the ERP Phase 2 applicant and applicable affiliates as provided in 7 CFR part 12.

(c) If requested by FSA, the producer must provide additional documentation that establishes the producer's eligibility for ERP Phase 2. If supporting documentation is requested, the documentation must be submitted to FSA within 30 calendar days from the request or the application will be disapproved by FSA. FSA may request supporting documentation to verify information provided by the producer and the producer's eligibility including, but not limited to, the producer's:

- (1) Allowable gross revenue reported on the ERP Phase 2 application;
- (2) Percentages of the expected allowable gross revenue from:

- (i) Specialty and high value crops; and
  - (ii) Other crops; and
- (3) Ownership share in the agricultural commodities.

**§ 760.1905 Payment calculation.**

(a) ERP Phase 2 payments will be calculated separately for each disaster year. If a producer indicates that they have expected revenue for both specialty and high value crops and other crops for a disaster year, a payment will be calculated separately for:

- (1) Specialty and high value crops; and
- (2) Other crops.

(b) To determine a producer's ERP Phase 2 payment amount, FSA will calculate:

- (1) The producer's benchmark year allowable gross revenue, adjusted according to 7 CFR 760.1903, if applicable, multiplied by the ERP factor of 70 percent; minus
- (2) The producer's disaster year allowable gross revenue; minus
- (3) The sum of the producer's net ERP Phase 1 payments for the 2020 program year, if the calculation is for the 2020 disaster year, or for the 2021 and 2022 program years, if the calculation is for the 2021 disaster year; minus
- (4) The sum of the producer's net CFAP payments (excluding payments for contract producer revenue), net 2020 WHIP+ payments, and net 2020 Quality Loss Adjustment (QLA) Program payments, if the calculation is for the 2020 disaster year; and
- (5) Multiplied by the percentage of the expected disaster year revenue for specialty and high value crops or other crops, as applicable, to determine the separate payments for specialty and high value crops or other crops.

(c) FSA will issue an initial payment equal to the lesser of the amount calculated according to this section or the maximum initial payment amount of \$2,000. If a producer has also received a payment under ERP Phase 1, FSA will reduce the producer's initial ERP Phase 2 payment amount by subtracting the producer's ERP Phase 1 gross payment amount.

(d) After the close of the ERP Phase 2 application period, FSA will issue a final payment equal to the amount calculated according to this section minus the amount of the producer's initial payment. If total calculated payments exceed the total funding available for ERP Phase 2, the ERP factor may be adjusted and the final payment amounts will be prorated to stay within the amount of available funding. If there are insufficient funds, a differential of 15 percent will be used for underserved

producers similar to ERP Phase 1, but with a cap at the statutory maximum of 70 percent. For example, if the ERP Factor is set at 50 percent, the factor used for underserved producers will be 65 percent, but if the factor is set at 55 percent or higher, the factor for underserved producers will be capped at 70 percent.

(e) If a producer receives assistance through CFAP or ERP Phase 1 after their ERP Phase 2 payment is calculated, the producer's ERP Phase 2 payment will be recalculated and the producer must refund any resulting overpayment.

**§ 760.1906 Payment limitation and attribution.**

(a) The payment limitation for ERP is determined by the person's or legal entity's average adjusted gross farm income (income from activities related to farming, ranching, or forestry). Specifically, if their average adjusted gross farm income is less than 75 percent of their average adjusted gross income (AGI) for the three taxable years preceding the most immediately preceding complete tax year, a person or legal entity, other than a joint venture or general partnership, cannot receive, directly or indirectly, more than \$125,000 in payments for specialty crops and high value crops<sup>1</sup> and \$125,000 in payment for all other crops under:

(1) ERP Phase 1 for program year 2020 and ERP Phase 2 for program year 2020, combined; and

(2) ERP Phase 1 for program years 2021 and 2022 and ERP Phase 2 for program year 2021, combined.

(b) If at least 75 percent of the person or legal entity's average AGI is derived from farming, ranching, or forestry related activities and the producer provides the required certification and documentation, as discussed below, the person or legal entity, other than a joint venture or general partnership, is eligible to receive, directly or indirectly, up to:

(1) \$900,000 for specialty crops and high value crops combined for:

(i) ERP Phase 1 for program year 2020 and ERP Phase 2 for program year 2020, combined; and

(ii) ERP Phase 1 for program years 2021 and 2022 and ERP Phase 2 for program year 2021, combined.; and

(2) \$250,000 for all other crops for:

(i) ERP Phase 1 for program year 2020 and ERP Phase 2 for program year 2020, combined; and

<sup>1</sup> High value crops were not defined in ERP Phase 1; therefore, only ERP Phase 1 payments for specialty crops, as defined in the ERP Phase 1 notice of funds availability, will be counted toward the increased payment limitation for specialty and high value crops.

(ii) ERP Phase 1 for program years 2021 and 2022 and ERP Phase 2 for program year 2021, combined.

(c) The relevant tax years for establishing a producer's AGI and percentage derived from farming, ranching, or forestry related activities are:

(1) Years 2016, 2017, and 2018 for program year 2020; and

(2) Years 2017, 2018, and 2019 for program year 2021.

(d) To receive more than \$125,000 in ERP payments, producers must submit form FSA-510, accompanied by a certification from a certified public accountant or attorney as to that person or legal entity's certification. If a producer requesting the increased payment limitation is a legal entity, all members of that entity must also complete form FSA-510 and provide the required certification according to the direct attribution provisions in 7 CFR 1400.105, "Attribution of Payments." If a legal entity would be eligible for the increased payment limitation based on the legal entity's average AGI from farming, ranching, or forestry related activities but a member of that legal entity either does not complete a form FSA-510 and provide the required certification or is not eligible for the increased payment limitation, the payment to the legal entity will be reduced for the limitation applicable to the share of the ERP Phase 2 payment attributed to that member.

(e) If a producer files form FSA-510 and the accompanying certification after their ERP Phase 2 payment is issued but before the deadline announced by FSA, FSA will process the form FSA-510 and issue the additional payment amount if a maximum initial payment amount has not been reached.

(f) A payment made to a legal entity will be attributed to those members who have a direct or indirect ownership interest in the legal entity, unless the payment of the legal entity has been reduced by the proportionate ownership interest of the member due to that member's ineligibility. Attribution of payments made to legal entities will be tracked through four levels of ownership in legal entities as follows:

(1) First level of ownership: Any payment made to a legal entity that is owned in whole or in part by a person will be attributed to the person in an amount that represents the direct ownership interest in the first-level or payment legal entity;

(2) Second level of ownership: Any payment made to a first-level legal entity that is owned in whole or in part by another legal entity (referred to as a second-level legal entity) will be

attributed to the second-level legal entity in proportion to the ownership of the second-level legal entity in the first-level legal entity; if the second-level legal entity is owned in whole or in part by a person, the amount of the payment made to the first-level legal entity will be attributed to the person in the amount that represents the indirect ownership in the first-level legal entity by the person;

(3) Third and fourth levels of ownership: Except as provided in the second-level ownership in paragraph (f)(2) of this section and in the fourth level of ownership in paragraph (f)(4) of this section, any payments made to a legal entity at the third and fourth levels of ownership will be attributed in the same manner as specified in paragraph (f)(2) of this section; and

(4) Fourth-level of ownership: If the fourth level of ownership is that of a legal entity and not that of a person, a reduction in payment will be applied to the first-level or payment legal entity in the amount that represents the indirect ownership in the first-level or payment legal entity by the fourth-level legal entity.

(g) Payments made directly or indirectly to a person who is a minor child will not be combined with the earnings of the minor's parent or legal guardian.

(h) A producer that is a legal entity must provide the names, addresses, ownership share, and valid taxpayer identification numbers of the members holding an ownership interest in the legal entity. Payments to a legal entity will be reduced in proportion to a member's ownership share when a valid taxpayer identification number for a person or legal entity that holds a direct or indirect ownership interest, at the first through fourth levels of ownership in the business structure, is not provided to FSA.

(i) If an individual or legal entity is not eligible to receive ERP Phase 2 payments due to the individual or legal entity failing to satisfy payment eligibility provisions, the payment made either directly or indirectly to the individual or legal entity will be reduced to zero. The amount of the reduction for the direct payment to the producer will be commensurate with the direct or indirect ownership interest of the ineligible individual or ineligible legal entity.

(j) Like other programs administered by FSA, payments made to an Indian Tribe or Tribal organization, as defined in section 4(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304), will not be subject to payment limitation.

#### **§ 760.1907 Eligibility subject to verification.**

(a) Producers who are approved for participation in ERP Phase 2 are required to retain documentation in support of their application for 3 years after the date of approval.

(b) Participants receiving ERP Phase 2 payments must permit authorized representatives of USDA or the Government Accountability Office, during regular business hours, to enter the agricultural operation and to inspect, examine, and to allow representatives to make copies of books, records, or other items for the purpose of confirming the accuracy of the information provided by the participant.

#### **§ 760.1908 Miscellaneous provisions.**

(a) If an ERP Phase 2 payment resulted from erroneous information provided by a producer, or any person acting on their behalf, the payment will be recalculated and the producer must refund any excess payment with interest calculated from the date of the disbursement of the payment.

(b) If FSA determines that the producer intentionally misrepresented information provided on their application, the application will be disapproved and the producer must refund the full payment to FSA with interest from the date of disbursement.

(c) Any required refunds must be resolved in accordance with part 3 of this title.

(d) A producer, whether a person or legal entity, that either fails to timely provide all required documentation or fails to satisfy any eligibility requirement for ERP Phase 2, is not eligible to receive ERP Phase 2 payments, directly or indirectly. An ERP Phase 2 payment to an eligible legal entity applicant whose member(s) either fails to timely provide all required documentation or fails to satisfy any eligibility requirement for ERP Phase 2 will be reduced proportionate to that member's ownership interest in the legal entity.

(e) Any payment under this subpart will be made without regard to questions of title under State law and without regard to any claim or lien against the commodity or proceeds from the sale of the commodity. The regulations governing offsets in part 3 of this title apply to payments made under this subpart.

(f) For the purposes of the effect of a lien on eligibility for Federal programs (28 U.S.C. 3201(e)), USDA waives the restriction on receipt of funds under ERP Phase 2 but only as to beneficiaries who, as a condition of the waiver, agree

to apply the ERP Phase 2 payments to reduce the amount of the judgment lien.

(g) In addition to any other Federal laws that apply to ERP Phase 2, the following laws apply: 15 U.S.C. 714; 18 U.S.C. 286, 287, 371, and 1001.

#### § 760.1909 Perjury.

In either applying for or participating in ERP Phase 2, or both, the producer is subject to laws against perjury and any resulting penalties and prosecution, including, but not limited to, 18 U.S.C. 1621. If the producer willfully makes and represents as true any verbal or written declaration, certification, statement, or verification that the producer knows or believes not to be true, in the course of either applying for or participating in ERP Phase 2, or both, then the producer may be guilty of perjury and, except as otherwise provided by law, may be fined, imprisoned for not more than 5 years, or both, regardless of whether the producer makes such verbal or written declaration, certification, statement, or verification within or without the United States.

#### § 760.1910 Requirement to purchase crop insurance or NAP coverage.

(a) Producers must report all crops that suffered a revenue loss in whole or in part due to a qualifying disaster event on form FSA-522, Crop Insurance and/or NAP Coverage Agreement.

(b) All producers who receive ERP Phase 2 payments must file an accurate acreage report and purchase crop insurance or NAP coverage where crop insurance is not available, for the next 2 available crop years. For each crop reported according to paragraph (a) of this section, participants must obtain crop insurance or NAP, as may be applicable:

(1) At a coverage level equal to or greater than 60 percent for insurable crops; or

(2) At the catastrophic level or higher for NAP crops.

(c) Availability will be determined from the date a producer receives an ERP payment and may vary depending on the timing and availability of crop insurance or NAP for a producer's particular crops. The final crop year to purchase crop insurance or NAP coverage to meet the second year of coverage for this requirement is the 2026 crop year.

(d) In situations where crop insurance is unavailable for a crop, an ERP participant must obtain NAP coverage. Section 1001D of the Food Security Act of 1985 (1985 Farm Bill) provides that a person or entity with an AGI greater than \$900,000 is not eligible to

participate in NAP; however, producers with an AGI greater than \$900,000 are eligible for ERP. To reconcile this restriction in the 1985 Farm Bill and the requirement to obtain NAP or crop insurance coverage, ERP participants may meet the purchase requirement by purchasing Whole-Farm Revenue Protection (WFRP) crop insurance coverage, if eligible, or they may pay the applicable NAP service fee despite their ineligibility for a NAP payment. In other words, the service fee must be paid even though no NAP payment may be made because the AGI of the person or entity exceeds the 1985 Farm Bill limitation.

(e) If both Federal crop insurance and NAP coverage are unavailable for a crop, the producer must obtain WFRP crop insurance coverage, if eligible.

(f) For all crops listed on form FSA-522, producers who have the crop or crop acreage in subsequent years and who fail to obtain the 2 years of crop insurance or NAP coverage required as required by this section, must refund the ERP Phase 2 payment with interest from the date of disbursement. Producers who do not plant a crop listed on form FSA-522 in a year for which this requirement applies are not subject to the crop insurance or NAP purchase requirement for that year.

(g) Producers who received an ERP Phase 1 payment for a crop are not required to obtain additional years of crop insurance or NAP coverage for that crop if they also receive an ERP Phase 2 payment for a loss associated with that crop.

### PART 1400—PAYMENT LIMITATION AND PAYMENT ELIGIBILITY

■ 29. The authority citation for part 1400 continues to read as follows:

**Authority:** 7 U.S.C. 1308, 1308-1, 1308-2, 1308-3, 1308-3a, 1308-4, and 1308-5; and Title I, Pub. L. 115-123.

#### Subpart A—General Provisions

■ 30. Add § 1400.10 to read as follows:

##### § 1400.10 Notification of interests.

(a) To facilitate administration of subparts B, C, E, and F of this part for programs specified in § 1400.1, or any other program as provided in individual program regulations in this chapter, a person or legal entity must provide information in the manner as prescribed by the Deputy Administrator.

(b) The information required to be submitted under paragraph (a) of this section must include:

(1) The name, address, valid taxpayer identification number, and ownership share of each person, or the name, address, valid taxpayer identification

number, and ownership share of each legal entity, that holds or acquires an ownership interest in the legal entity; and

(2) The name, address, valid taxpayer identification number, and ownership share of each legal entity in which the person or legal entity holds an ownership interest.

(c) Except as provided in paragraph (d) of this section, payments to a legal entity will be reduced in proportion to a member's ownership share when a valid taxpayer identification number for a person or legal entity that holds a direct or indirect ownership interest of less than 10 percent at, or above the fourth level of ownership in the business structure is not provided to USDA. Additionally, A legal entity will not be eligible to receive payment when a valid taxpayer identification number for a person or legal entity that holds a direct or indirect ownership interest of 10 percent or greater at, or above the fourth level of ownership in the business structure is not provided to USDA.

(d) In order to be eligible to receive any payment specified in § 1400.1(a)(7) or as provided by the Natural Resources Conservation Service in individual program regulations in this chapter, a person or legal entity must provide information in the manner as prescribed by the Deputy Administrator as identified in paragraph (b) of this section. Paragraph (c) of this section does not apply to the identified Natural Resources Conservation Service programs (programs specified in § 1400.1(a)(7) or any other Natural Resources Conservation Service program as specified in the individual program regulations in this chapter).

#### Subpart B—Payment Limitation

##### § 1400.107 [Removed]

■ 31. Remove § 1400.107.

### PART 1416—EMERGENCY AGRICULTURAL DISASTER ASSISTANCE PROGRAMS

■ 32. The authority citation for part 1416 continues to read as follows:

**Authority:** Title I, Pub. L. 113-79, 128 Stat. 649; Title I, Pub. L. 115-123; Title VII, Pub. L. 115-141; and Title I, Pub. L. 116-20.

#### Subpart A—General Provisions for Supplemental Agricultural Disaster Assistance Programs

##### § 1416.5 [Removed and Reserved]

■ 33. Remove and reserve § 1416.5.

**Subpart B—Emergency Assistance for Livestock, Honeybees, and Farm-Raised Fish Program**

■ 34. In § 1416.102, in the definition of “eligible loss condition”, add a sentence at the end of the definition to read as follows:

**§ 1416.102 Definitions.**

\* \* \* \* \*  
*Eligible loss condition* \* \* \* All other causes of losses are not covered, including, but not limited to, negligence, mismanagement, or wrongdoing by the producer.  
 \* \* \* \* \*

■ 35. Amend § 1416.103 as follows:

- a. Add a sentence to the end of paragraph (a); and
- b. In paragraph (d)(6), in the first sentence, remove “transport,” and add “transport” in its place.

The addition reads as follows:

**§ 1416.103 Eligible losses, adverse weather, and other loss conditions.**

(a) \* \* \* All other causes of loss are not considered an eligible loss condition, including, but not limited to, negligence, mismanagement or wrongdoing by the producer.  
 \* \* \* \* \*

■ 36. Amend § 1416.104 as follows:

- a. Redesignate paragraphs (b)(16) and (17) as (b)(17) and (18), respectively;
- b. Add new paragraph (b)(16);
- c. Remove paragraph (c)(4);
- d. Redesignate paragraphs (c)(5) through (8) as paragraphs (c)(4) through (7), respectively;
- e. In newly redesignated paragraph (c)(6), add the word “and” at the end;
- f. Revise newly redesignated paragraph (c)(7); and
- g. Remove paragraph (c)(9).

The addition and revision read as follows.

**§ 1416.104 Eligible livestock, honeybees, and farm-raised fish.**

\* \* \* \* \*  
 (b) \* \* \*  
 (16) Ostriches,  
 \* \* \* \* \*  
 (c) \* \* \*  
 (7) Livestock that are not produced for commercial use or those that are not produced or maintained in a commercial operation for livestock products, such as milk from dairy, including, but not limited to:  
 (i) Any wild free roaming livestock;  
 (ii) Horses and other animals used or intended to be used for racing or wagering;  
 (iii) Animals produced or maintained for hunting; and

(iv) Animals produced or maintained for consumption by owner.  
 \* \* \* \* \*

**Subpart C—Livestock Forage Disaster Program**

■ 37. Amend § 1416.204 as follows:

- a. In paragraph (a)(1), add “ostriches,” after “llamas,”;
- b. Revise paragraph (a)(5);
- c. Redesignate paragraphs (b)(15) and (16) as (b)(16) and (17), respectively;
- d. Add new paragraph (b)(15);
- e. Remove paragraph (c)(4);
- f. Redesignate paragraphs (c)(5) through (9) as (c)(4) through (8), respectively; and
- g. Revise newly redesignated paragraph (c)(8).

The revisions and addition read as follows.

**§ 1416.204 Covered livestock.**

\* \* \* \* \*  
 (a) \* \* \*  
 (5) Not have been produced and maintained for reasons other than commercial use as part of a farming operation. Such excluded uses include, but are not limited to:  
 (i) Any uses of wild free roaming livestock;  
 (ii) Racing or wagering;  
 (iii) Hunting; and  
 (iv) Consumption by owner; and  
 \* \* \* \* \*  
 (b) \* \* \*  
 (15) Ostriches,  
 \* \* \* \* \*  
 (c) \* \* \*  
 (8) Livestock produced or maintained for reasons other than commercial use, including, but not limited to, livestock produced or maintained for racing or wagering purposes, hunting, or consumption by owner.

**Subpart D—Livestock Indemnity Program**

■ 38. Amend § 1416.304 as follows:

- a. In paragraph (c)(3), remove the words “for livestock” and add “for livestock sale or” in their place; and
  - b. Revise paragraph (c)(4).
- The revision reads as follows.

**§ 1416.304 Eligible livestock.**

\* \* \* \* \*  
 (c) \* \* \*  
 (4) Not be produced or maintained for reasons other than commercial use for livestock sale or for the production of livestock products such as milk or eggs. Livestock excluded from being eligible include, but are not limited to:  
 (i) Wild free roaming animals;  
 (ii) Horses and other animals used or intended to be used for racing or wagering;

(iii) Animals produced or maintained for hunting; and

(iv) Animals produced or maintained for consumption by owner.  
 \* \* \* \* \*

■ 39. Amend § 1416.305 as follows:

- a. In paragraph (g) introductory text, remove the words “if reliable” and add the words “if the livestock are not owned by the licensed veterinarian and reliable” in their place;
- b. Revise paragraph (i) introductory text; and
- c. In paragraph (i)(1) introductory text, remove the words “For 2017 and subsequent calendar years, livestock inventory reports by livestock unit must be provided to the local county FSA office by the later of December 3, 2018, or” and add “Livestock inventory reports by livestock unit must be provided to the FSA local county office by” in their place.

The revision reads as follows.

**§ 1416.305 Application process.**

(i) Unweaned livestock operations may provide proof of death by using the LBIH.  
 \* \* \* \* \*

**PART 1437—NONINSURED CROP DISASTER ASSISTANCE PROGRAM**

■ 40. The authority citation for part 1437 continues to read as follows:

**Authority:** 7 U.S.C. 1501–1508 and 7333; 15 U.S.C. 714–714m; 19 U.S.C. 2497, and 48 U.S.C. 1469a.

**Subpart A—General Provisions**

■ 41. In § 1437.3, revise the definition of “Application for coverage” to read as follows:

**§ 1437.3 Definitions.**

\* \* \* \* \*  
*Application for coverage* means:  
 (1) The form specified by FSA to be completed by a producer applying for NAP coverage for an eligible crop that is accompanied by the service fee or the service fee waiver form, or  
 (2) Another applicable form, designated by the Deputy Administrator to qualify as an application for NAP, that the producer has on file with FSA before the deadline for application for the coverage period which certifies they are eligible for a service fee waiver.  
 \* \* \* \* \*

**§ 1437.6 [Amended]**

- 42. Amend § 1437.6 as follows:
- a. Remove paragraph (a)(1); and
- b. Redesignate paragraphs (a)(2) and (3) as (a)(1) and (2), respectively.

§ 1437.7 [Amended]

- 43. Amend § 1437.7 as follows:
  - a. In paragraph (a), remove the words “in the administrative county office”;
  - b. In paragraph (b) introductory text, remove the words “request for” and add the words “certification of eligibility for a” in their place; and
  - c. In paragraph (g) add the words “for any buy-up coverage elected” at the end of the first sentence.

**PART 1450—BIOMASS CROP ASSISTANCE PROGRAM (BCAP)**

- 44. The authority citation for part 1450 continues to read as follows:
  - Authority:** 7 U.S.C. 8111.
- 45. In § 1450.2, add a definition for “Socially disadvantaged farmer or rancher” in alphabetical order to read as follows.

**§ 1450.2 Definitions.**  
\* \* \* \* \*

*Socially disadvantaged farmer or rancher* means a farmer or rancher who

is a member of a socially disadvantaged group. A socially disadvantaged group is a group whose members have been subjected to racial or ethnic prejudice because of their identity as members of a group without regard to their individual qualities.

\* \* \* \* \*

**Gloria Montaña Greene,**  
*Deputy Under Secretary, Farm Production and Conservation, U.S. Department of Agriculture.*

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Part V

Department of Education

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34 CFR Part 685

Improving Income-Driven Repayment for the William D. Ford Federal Direct Loan Program; Proposed Rule

**DEPARTMENT OF EDUCATION****34 CFR Part 685**

[Docket ID ED–2023–OPE–0004]

RIN 1840–AD81

**Improving Income-Driven Repayment for the William D. Ford Federal Direct Loan Program****AGENCY:** Office of Postsecondary Education, Department of Education.**ACTION:** Notice of proposed rulemaking.

**SUMMARY:** The Secretary proposes to amend the regulations governing income-contingent repayment plans by amending the Revised Pay as You Earn (REPAYE) repayment plan, and to restructure and rename the repayment plan regulations under the William D. Ford Federal Direct Loan (Direct Loan) Program, including combining the Income Contingent Repayment (ICR) and the Income-Based Repayment (IBR) plans under the umbrella term of “Income-Driven Repayment (IDR) plans.”

**DATES:** We must receive your comments on or before February 10, 2023.

**ADDRESSES:** Comments must be submitted via the Federal eRulemaking Portal at *regulations.gov*. However, if you require an accommodation or cannot otherwise submit your comments via *Regulations.gov*, please contact the program contact person listed under **FOR FURTHER INFORMATION CONTACT**. The Department will not accept comments submitted by fax or by email or comments submitted after the comment period closes. To ensure that the Department does not receive duplicate copies, please submit your comment only once. Additionally, please include the Docket ID at the top of your comments.

The Department strongly encourages you to submit any comments or attachments in Microsoft Word format. If you must submit a comment in Adobe Portable Document Format (PDF), the Department strongly encourages you to convert the PDF to “print-to-PDF” format, or to use some other commonly used searchable text format. Please do not submit the PDF in a scanned format. Using a print-to-PDF format allows the Department to electronically search and copy certain portions of your submissions to assist in the rulemaking process.

**Federal eRulemaking Portal:** Please go to *www.regulations.gov* to submit your comments electronically. Information on using *Regulations.gov*, including instructions for finding a rule on the site

and submitting comments, is available on the site under “FAQ.”

**Privacy Note:** The Department’s policy is to generally make comments received from members of the public available for public viewing at *www.regulations.gov*. Therefore, commenters should include in their comments only information about themselves that they wish to make publicly available. Commenters should not include in their comment any information that identifies other individuals or that permits readers to identify other individuals. If, for example, your comment describes an experience of someone other than yourself, please do not identify that individual or include information that would allow readers to identify that individual. The Department will not make comments that contain personally identifiable information (PII) about someone other than the commenter publicly available on *www.regulations.gov* for privacy reasons. This may include comments where the commenter refers to a third-party individual without using their name if the Department determines that the comment provides enough detail that could allow one or more readers to link the information to the third party. If your comment refers to a third-party individual, to help ensure that your comment is posted, please consider submitting your comment anonymously to reduce the chance that information in your comment about a third party could be linked to the third party. The Department will also not make comments that contain threats of harm to another person or to oneself available on *www.regulations.gov*.

**FOR FURTHER INFORMATION CONTACT:** Richard Blasen, Office of Postsecondary Education, 400 Maryland Ave. SW, Washington, DC 20202. Telephone: (202) 987–0315. Email: *Richard.Blasen@ed.gov*.

If you are deaf, hard of hearing, or have a speech disability and wish to access telecommunications relay services, please dial 7–1–1.

**SUPPLEMENTARY INFORMATION:****Executive Summary***Purpose of This Regulatory Action*

College affordability and student loan debt are significant challenges for many Americans. Student loan debt has risen to \$1.6 trillion in aggregate over the past 10 years, and the inability to repay student loan debt has been cited as a major obstacle to middle class

milestones such as homeownership.<sup>1</sup> In this notice of proposed rulemaking (NPRM), the Department proposes several significant improvements to the repayment plans available to student loan borrowers to make it easier for borrowers to repay their loans.

The Department convened the Affordability and Student Loans negotiated rulemaking committee (Committee) between October 4, 2021, and December 10, 2021,<sup>2</sup> to consider proposed regulations for the Federal student financial aid programs authorized under title IV of the Higher Education Act of 1965, as amended (title IV, HEA programs). The Committee operated by consensus, which means that there must be no dissent by any member for the Committee to be considered to have reached agreement. The Committee did not reach consensus on the topic of IDR plans.

On July 13, 2022, the Department published in the **Federal Register** (87 FR 41878) an NPRM related to other topics which were considered by the Affordability and Student Loans Committee. The Department published the final rule on November 1, 2022, 87 FR 65904, (Affordability and Student Loans Final Rule).

This NPRM addresses IDR plans (repayment plans that base a borrower’s monthly payment amount on the borrower’s income and family size). These proposed changes to the rules governing IDR plans would help ensure that student loan borrowers have greater access to affordable repayment terms based upon their income, resulting in lower monthly payments and lower amounts repaid over the life of a loan.

The Department proposes to amend §§ 685.102, 685.208, 685.209, 685.210, 685.211, and 685.221 to reflect the proposed changes to IDR plans. The proposed IDR regulations would expand the benefits of the REPAYE plan, including providing more affordable monthly payments, by increasing the amount of income protected from the calculation of the borrower’s payments, lowering the share of unprotected income used to calculate payment amounts on undergraduate debt, reducing the amount of time before reaching forgiveness for borrowers with

<sup>1</sup> R. Chakrabarti, N. Gorton, and W. van der Klaauw, “Diplomas to Doorsteps: Education, Student Debt, and Homeownership,” Federal Reserve Bank of New York *Liberty Street Economics* (blog), April 3, 2017, [https://libertystreeteconomics.newyorkfed.org/2017/04/diplomas-to-doorsteps-education-student-debt-and-homeownership.html](https://libertystreeteconomics.newyorkfed.org/2017/04/diplomas-to-doorsteps-education-student-debt-and-homeownership/http://libertystreeteconomics.newyorkfed.org/2017/04/diplomas-to-doorsteps-education-student-debt-and-homeownership.html).

<sup>2</sup> <https://www2.ed.gov/policy/highered/reg/heardulemaking/2021/index.html?src=nr#loans?>

low balances, and not charging any remaining accrued interest each month after applying a borrower's payment. The proposed regulations would also allow borrowers to receive credit toward forgiveness for certain periods of deferment or forbearance.

The proposed regulations would streamline and standardize the Direct Loan Program repayment regulations by categorizing existing repayment plans into three types: fixed payment repayment plans, which are plans with monthly payments based on the scheduled repayment period, loan debt, and interest rate; IDR plans, which are plans with monthly payments based in whole or in part on the borrower's income and family size; and the alternative repayment plan, which is only used on a case-by-case basis when a borrower has exceptional circumstances.<sup>3</sup> As part of the reorganization of the regulations, the Department seeks to standardize and clarify the regulations (including changes to the terms of the plans themselves), refine sections of the regulations that may be ambiguous to reflect the Department's long-standing interpretation of those regulations, and simplify the procedures and terms of the existing plans.

The Affordability and Student Loans Committee discussed and reached consensus on proposed regulatory changes that would remove most events from the current rules that require interest capitalization. That Committee also discussed but did not reach consensus on IDR. This NPRM proposes changes to IDR. We addressed interest capitalization in the Affordability and Student Loans Final Rule. In this NPRM, we make technical and conforming changes to that language as part of the reorganization of regulatory language for IDR plans.

#### *Summary of the Major Provisions of This Regulatory Action*

The proposed regulations would make the following changes to the IDR plans (§ 685.209):

- Expand access to affordable monthly payments on Direct Loans through changes to the REPAYE repayment plan.
- For borrowers on the REPAYE plan, increase the amount of income exempted from the calculation of the borrower's payment amount from 150 percent of the applicable poverty guideline to 225 percent of the applicable poverty guideline.

- Lower the share of discretionary income that the REPAYE formula would mandate be put toward monthly payments so that borrowers with only outstanding loans for an undergraduate program pay 5 percent of their discretionary income and those who have outstanding loans for undergraduate and graduate programs pay between 5 and 10 percent based upon the weighted average of their original principal balances attributable to those different program levels.

- Provide for a shorter repayment period and earlier forgiveness for borrowers with low original loan principal balances.
- Simplify the provision that a borrower who fails to recertify their income is placed on an alternative repayment plan.
- Under the modified REPAYE plan, cease charging any remaining accrued interest each month after applying a borrower's payment.

- Make additional improvements that help borrowers benefit from the IDR plans by allowing borrowers to receive credit toward forgiveness for certain periods of deferment or forbearance. For periods of deferment or forbearance for which borrowers do not automatically receive credit, borrowers could make additional payments through a new provision that would allow them to also get credit for those months. The proposed regulations would also allow borrowers to maintain credit toward forgiveness for payments made prior to consolidating their loans.

- Streamline and standardize the Direct Loan Program repayment regulations by locating all repayment plan provisions in sections of the regulations that are listed by repayment plan type: fixed payment, income-driven, and alternative repayment plans.

- Clarify the repayment plan options available to borrowers through streamlining of the regulations and reduce complexity in the student loan repayment system by phasing out enrollment in the existing IDR plans to the extent that current law allows, except that no borrower would be required to switch to a different repayment plan.

- Eliminate burdensome and confusing recertification regulations for borrowers using IDR plans.
- Make updates to appropriate cross-references.

*Costs and Benefits:* As further detailed in the Regulatory Impact Analysis (RIA), the proposed regulations would have significant impacts on borrowers, taxpayers, and the Department. The effects related to the Department could also include some costs on the entities

it contracts with to service student loans.

Borrowers would benefit from more affordable IDR plans and streamlining of existing IDR plans. The proposed IDR changes would help borrowers to avoid delinquency and defaults, which are harmful for borrowers and create administrative complexities for collection. For borrowers who might otherwise be averse to taking on debt and who would be willing to borrow Federal student loans under this more affordable IDR plan, the additional borrowing may help them to enroll, stay in school, and complete their degrees.

Additionally, the Department would benefit from streamlining existing IDR plans as administration of repayment plans would be easier.

Costs associated with these proposed changes to IDR plans include implementation costs and increased costs of the student loan programs to the taxpayers in the form of transfers to borrowers who would pay less on their loans. The implementation costs include paying student loan servicers to adjust their systems. As detailed in the RIA, the proposed changes are estimated to have a net budget impact of \$137.9 billion across all loan cohorts through 2032.

*Invitation to Comment:* We invite you to submit comments regarding these proposed regulations. To ensure that your comments have maximum effect in developing the final regulations, we urge you to clearly identify the specific section or sections of the proposed regulations that each of your comments addresses and to arrange your comments in the same order as the proposed regulations.

We invite you to assist us in complying with the specific requirements of Executive Orders 12866 and 13563 and their overall requirement of reducing regulatory burden that might result from these proposed regulations. Please let us know of any further ways we could reduce potential costs or increase potential benefits while preserving the effective and efficient administration of the Department's programs and activities. The Department also welcomes comments on any alternative approaches to the subject addressed in the proposed regulations.

During and after the comment period, you may inspect public comments about these proposed regulations by accessing *Regulations.gov*.

*Assistance to Individuals with Disabilities in Reviewing the Rulemaking Record:* On request, we will provide an appropriate accommodation or auxiliary aid to an individual with a

<sup>3</sup> <https://www.ecfr.gov/current/title-34/subtitle-B/chapter-VI/part-685/subpart-B/section-685.208>.

disability who needs assistance to review the comments or other documents in the public rulemaking record for these proposed regulations. If you want to schedule an appointment for this type of accommodation or auxiliary aid, please contact one of the persons listed under **FOR FURTHER INFORMATION CONTACT**.

### Background

The Department's regulations currently contain more than a half dozen repayment plans: standard, extended, graduated, alternative, IBR, ICR, Pay As You Earn (PAYE), and REPAYE. Of these, eligible borrowers may choose from up to four different repayment plans where monthly payment amounts are based in part on a borrower's income, referred to collectively as IDR plans: IBR, ICR, PAYE, and REPAYE.

When the HEA was initially enacted, it contained only one repayment plan: the standard repayment plan. Under the standard repayment plan, borrowers are required to repay their loans in full within 10 years from the date the loan entered repayment by making fixed monthly payments, or between 10 and 30 years if the loan is a Direct or Federal Family Education Loan (FFEL) Program Consolidation Loan. Over the years, Congress has added other plans designed to keep amortized repayment amounts affordable. Those plans relied on traditional tools like extending the repayment period and allowing for lower initial payments that increase on a set schedule over time. More specifically, the extended repayment plan provides for fixed, but smaller, monthly payments over a 25-year period instead of a 10-year period. However, the extended repayment plan is only available if the borrower owes more than \$30,000. The plan is also limited to those who borrowed after October 7, 1998. However, that date limitation alone is unlikely to affect significant numbers of borrowers at this time.

The graduated repayment plan allows borrowers to repay their loans by making small payments at the beginning of their repayment period, and gradually increasing payments in later years. Under the graduated repayment plan, a borrower is required to repay the loan in full within 10 years from the date the loan entered repayment, or between 10 and 30 years if the loan is a Direct or FFEL Consolidation loan.

When Congress passed legislation to create the Direct Loan Program, it included the original ICR plan as an

option for borrowers in that program.<sup>4</sup> ICR provides a flexible alternative to the traditional standard, extended, and graduated repayment plans also offered under the HEA.<sup>5</sup> Under the ICR plan, a borrower's monthly payment amount is generally calculated based on the total amount of the borrower's Direct Loans, family size, and adjusted gross income (AGI). A borrower's required monthly payment amount is determined to be the lesser of (1) 20 percent of their discretionary income (AGI less 100 percent of the applicable poverty guideline), divided by 12, or (2) the amount the borrower would repay annually over 12 years when using standard amortization multiplied by an income percentage factor corresponding to the borrower's AGI, divided by 12.

In 2007, Congress established the IBR plan and made it available to borrowers in both the Direct Loan and FFEL Programs. The IBR plan requires borrowers to make monthly payments of 15 percent of their discretionary income (AGI minus 150 percent of the poverty guideline based upon their family size, divided by 12) and provides forgiveness after the equivalent of 25 years' worth of monthly payments. Congress modified the IBR plan in 2010 to lower the percentage of income a borrower must pay monthly to 10 percent of their discretionary income and shortened the time to forgiveness to 20 years' worth of monthly payments. These revised IBR terms are only available to new borrowers as of 2014. This revised plan is sometimes referred to as the "New IBR." Congress also required that, to qualify for either version of the IBR plan, a borrower must have a partial financial hardship (PFH). A PFH means that a borrower's calculated payment on IBR had to be at or below what the borrower would have paid on the 10-year standard plan.

The next income-contingent repayment plan, the PAYE repayment plan, became available on July 1, 2013. In general, the PAYE plan was designed for certain borrowers to get repayment terms similar to IBR even if they borrowed before 2014. PAYE is available to borrowers who did not have an outstanding loan balance on or after October 1, 2007, but who received at least one loan disbursement on or after

October 1, 2011. The PAYE plan also includes a PFH requirement identical to IBR, sets payments at 10 percent of discretionary income, and a loan forgiveness time frame equivalent to 20 years of qualifying monthly payments.<sup>6</sup>

The latest income-contingent repayment plan became available on July 1, 2016, in accordance with President Obama's memorandum directing the Department to ensure more Direct Loan borrowers could limit their loan payments to 10 percent of their monthly incomes.<sup>7</sup> To meet this goal, the Secretary issued final regulations that added a new income-contingent repayment plan, the REPAYE plan. This plan was modeled on the PAYE plan and may be used to repay any outstanding loans made to a borrower under the Direct Loan Program, except for defaulted loans, Direct PLUS loans made to a parent borrower to pay the cost of attendance for a dependent student, or Direct Consolidation Loans that repaid Parent PLUS loans.<sup>8</sup>

In recent years, the Department has become increasingly concerned that the current IDR plans do not adequately serve struggling borrowers.<sup>9</sup> Borrowers face a maze of repayment options that may lead some borrowers to make suboptimal decisions, struggle with annual income re-certification requirements, or never enroll in an IDR plan at all and instead fall into delinquency and default. For some borrowers, particularly low-income borrowers, the payments on an IDR plan may still not be affordable. Borrowers who obtained even small loans, many of whom did not complete their credentials, may end up in repayment for decades. Borrowers who are making their monthly payments may also see their loan balances balloon over time as interest accrues.

This proposed regulation is intended to address these challenges for borrowers by ensuring access to a more generous, streamlined IDR plan. The Department initially considered creating another new repayment plan; however, based on concerns about the complexity

<sup>6</sup> <https://www.govinfo.gov/content/pkg/FR-2012-11-01/html/2012-26348.htm>.

<sup>7</sup> <https://obamawhitehouse.archives.gov/the-press-office/2014/06/09/presidential-memorandum-federal-student-loan-repayments>.

<sup>8</sup> <https://www.federalregister.gov/documents/2015/10/30/2015-27143/student-assistance-general-provisions-federal-family-education-loan-program-and-william-d-ford>.

<sup>9</sup> See, for example, <https://www.pewtrusts.org/en/research-and-analysis/reports/2022/02/redesigned-income-driven-repayment-plans-could-help-struggling-student-loan-borrowers>; <https://www.urban.org/research/publication/income-driven-repayment-student-loans-options-reform>; and <https://bfj.uchicago.edu/working-paper/2020-169/>.

<sup>4</sup> This NPRM uses the term income-driven repayment (IDR) to refer to all payment options that allow borrowers to make payments based upon their income. Income-contingent repayment plans refer to a subset of IDR options, whose terms are created through regulation. The plans created under the ICR authority are income-contingent repayment, Pay As You Earn, and Revised Pay As You Earn.

<sup>5</sup> <https://www.govinfo.gov/content/pkg/FR-1994-12-01/html/94-29260.htm>.

of the student loan repayment system and the challenges of navigating multiple IDR plans, we instead propose to reform the current REPAYE plan to provide greater benefits to borrowers.<sup>10</sup>

Making the REPAYE plan more generous would help address concerns around borrower confusion, because the Department and those who provide repayment plan information to borrowers would be able to present the revised plan as the IDR option that would be most affordable for a large majority of student borrowers.

#### Public Participation

The Department has significantly engaged the public in developing this NPRM, including through review of oral and written comments submitted by the public during four public hearings. During each negotiated rulemaking session, we provided opportunities for public comment at the end of each day. Additionally, during each negotiated rulemaking session, non-Federal negotiators obtained feedback from their stakeholders that they shared with the negotiating committee.

On May 26, 2021, the Department published a notice in the **Federal Register** (86 FR 28299) announcing our intent to establish multiple negotiated rulemaking committees to prepare proposed regulations on the affordability of postsecondary education, institutional accountability, and Federal student loans.

The Department developed a list of proposed regulatory provisions for the Affordability and Student Loans Committee based on advice and recommendations submitted by individuals and organizations in testimony at three virtual public hearings held by the Department on June 21 and June 23–24, 2021. Additionally, the Department accepted written comments on possible regulatory provisions that were submitted directly to the Department by interested parties and organizations. You may view the written comments submitted in response to the May 26, 2021, **Federal Register** notice on the Federal eRulemaking Portal at [www.regulations.gov](https://www.regulations.gov), within docket ID ED–2021–OPE–0077. Instructions for finding comments are also available on the site under “FAQ.”

Transcripts of the public hearings can be accessed at <https://www2.ed.gov/policy/highered/reg/hearulemaking/2021/index.html?src=rn>.

#### Negotiated Rulemaking

Section 492 of the HEA, 20 U.S.C. 1098a, requires the Secretary to obtain public involvement in the development of proposed regulations affecting programs authorized by title IV of the HEA. After obtaining extensive input and recommendations from the public, including individuals and representatives of groups involved in the title IV, HEA programs, the Secretary, in most cases, must engage in the negotiated rulemaking process before publishing proposed regulations in the **Federal Register**. If negotiators reach consensus on the proposed regulations, the Department agrees to publish without substantive alteration a defined group of regulations on which the negotiators reached consensus—unless the Secretary reopens the process or provides a written explanation to the participants stating why the Secretary has decided to depart from the agreement reached during negotiations. Further information on the negotiated rulemaking process can be found at: <https://www2.ed.gov/policy/highered/reg/hearulemaking/2021/index.html>.

The Department held negotiated rulemaking related to this NPRM. The negotiated rulemaking session for the Committee consisted of three rounds of negotiations that lasted 5 days each.

On August 10, 2021, the Department published a notice in the **Federal Register** (86 FR 43609) announcing its intention to establish the Committee to prepare proposed regulations for the title IV, HEA programs. The notice set forth a schedule for Committee meetings and requested nominations for individual negotiators to serve on the negotiating committee. In the notice, we announced the topics that the Committee would address.

The Committee included the following members, representing their respective constituencies:

- **Accrediting Agencies:** Heather Perfetti, Middle States Commission on Higher Education, and Michale McComis (alternate), Accrediting Commission of Career Schools and Colleges.

- **Dependent Students:** Dixie Samanigo, California State University, and Greg Norwood (alternate), Young Invincibles.

- **Departments of Corrections:** Anne L. Precythe, Missouri Department of Corrections.

- **Federal Family Education Loan Lenders and/or Guaranty Agencies:** Jaye O’Connell, Vermont Student Assistance Corporation, and Will Shaffner (alternate), Higher Education Loan Authority of the State of Missouri.

- **Financial Aid Administrators at Postsecondary Institutions:** Daniel Barkowitz, Valencia College, and Alyssa A. Dobson (alternate), Slippery Rock University.

- **4-Year Public Institutions:** Marjorie Dorimé-Williams, University of Missouri, and Rachele Feldman (alternate), University of North Carolina at Chapel Hill.

- **Independent Students:** Michaela Martin, University of La Verne, and Stanley Andrisse (alternate), Howard University.

- **Individuals With Disabilities or Groups Representing Them:** Bethany Lilly, The Arc of the United States, and John Whitelaw (alternate), Community Legal Aid Society.

- **Legal Assistance Organizations That Represent Students and/or Borrowers:** Persis Yu, National Consumer Law Center, and Joshua Rovenger (alternate), Legal Aid Society of Cleveland.

- **Minority-Serving Institutions:** Noelia Gonzalez, California State University.

- **Private Nonprofit Institutions:** Misty Sabouneh, Southern New Hampshire University, and Terrence S. McTier, Jr. (alternate), Washington University.

- **Proprietary Institutions:** Jessica Barry, The Modern College of Design in Kettering, Ohio, and Carol Colvin (alternate), South College.

- **State Attorneys General:** Joseph Sanders, Illinois Board of Higher Education, and Eric Apar (alternate), New Jersey Department of Consumer Affairs.

- **State Higher Education Executive Officers, State Authorizing Agencies, and/or State Regulators:** David Tandberg, State Higher Education Executive Officers Association, and Suzanne Martindale (alternate), California Department of Financial Protection and Innovation.

- **Student Loan Borrowers:** Jeri O’Bryan-Losee, United University Professions, and Jennifer Cardenas (alternate), Young Invincibles.

- **2-Year Public Institutions:** Robert Ayala, Southwest Texas Junior College, and Christina Tangelakis (alternate), Glendale Community College.

- **U.S. Military Service Members and Veterans or Groups Representing Them:** Justin Hauschild, Student Veterans of America, and Emily DeVito (alternate), The Veterans of Foreign Wars.

- **Federal Negotiator:** Jennifer M. Hong, U.S. Department of Education.

The Department also invited nominations for two advisors. These advisors were not voting members of the Committee and did not impact the consensus vote; however, they were

<sup>10</sup> <https://www2.ed.gov/policy/highered/reg/hearulemaking/2021/nov4pm.pdf>, p. 68.

consulted and served as a resource. The advisors were:

- Rajeev Darolia, University of Kentucky, for issues related to economic and/or higher education policy analysis and data.

- Heather Jarvis, Fosterus, for issues related to qualifying employers on the topic of Public Service Loan Forgiveness.

The Committee met to develop proposed regulations in October, November, and December 2021.

At its first meeting, the Committee reached agreement on its protocols and proposed agenda. The protocols provided, among other things, that the Committee would operate by consensus. The protocols defined consensus as no dissent by any member of the Committee and noted that consensus votes would be taken issue by issue.

The Committee reviewed and discussed the Department's drafts of regulatory language and alternative language and suggestions proposed by negotiators and Subcommittee members. The Committee reached consensus on interest capitalization. It also reached consensus on proposed regulations relating to prison education programs, Total and Permanent Disability, and False Certification Discharges that are not included in this publication. For more information on the negotiated rulemaking sessions, including the work of the Subcommittee, please visit: <https://www2.ed.gov/policy/highered/reg/hearulemaking/2021/index.html>.

#### Summary of Proposed Changes

These proposed regulations would—

- Amend § 685.208 to cover only fixed payment repayment plans, which are plans under which monthly payments are based on repayment period, loan debt, and interest rate.
- Amend § 685.209 to include regulations for all IDR plans, which are plans with monthly payments based in whole or in part on income and family size.
- Modify the terms of the REPAYE plan in § 685.209 to reduce monthly payment amounts for borrowers. A borrower who only has outstanding loans for an undergraduate program would pay 5 percent of their discretionary income, and a borrower who only has outstanding loans for a graduate program would pay 10 percent of their discretionary income. A borrower with outstanding loans from both an undergraduate and graduate program would pay an amount between 5 and 10 percent based upon the weighted average of the original principal balances of the loans

attributed to the undergraduate or graduate programs.

- Modify the REPAYE plan regulations in § 685.209 to reduce monthly payments for borrowers by increasing the amount of discretionary income exempted from the calculation of payments to 225 percent of the poverty guideline.
- Modify the REPAYE plan regulations in § 685.209 by ceasing to charge any unpaid accrued interest each month after applying a borrower's payment.
- Simplify the alternative repayment plan that a borrower is placed on if they are removed from the REPAYE plan because they fail to recertify their income, and only allow up to 12 payments on this plan to count toward forgiveness in § 685.221.
- Reduce the time to forgiveness under the REPAYE plan regulations in § 685.209 for borrowers with low original principal loan balances.
- Adjust the REPAYE plan regulations in § 685.209 to allow borrowers whose tax status is married filing separately to exclude their spouse from both the borrower's household income and family size.
- Modify the IBR plan regulations in § 685.209 to clarify that borrowers in default are eligible to make payments under the plan.
- Modify the regulations for all IDR plans in § 685.209 to allow the following periods of deferment and forbearance to count toward forgiveness:
  - Cancer treatment deferment under section 455(f)(3) of the HEA;
  - Rehabilitation training program deferment under § 685.204(e);
  - Unemployment deferment under § 685.204(f);
  - Economic hardship deferment under § 685.204(g), which includes deferments for Peace Corps service;
  - Military service deferment under § 685.204(h);
  - Post-active duty student deferment under § 685.204(i);
  - National service forbearance under § 685.205(a)(4);
  - National Guard Duty forbearance under § 685.205(a)(7);
  - U.S. Department of Defense Student Loan Repayment Program forbearance under § 685.205(a)(9); and
  - Administrative forbearance under § 685.205(b)(8) and (9).
- Modify the regulations applicable to all IDR plans in § 685.209 to allow borrowers an opportunity to make payments for all other periods in deferment or forbearance.
- Modify the regulations for all IDR plans in § 685.209 to clarify that a borrower's progress toward forgiveness

does not fully reset when a borrower consolidates loans on which a borrower had previously made qualifying payments.

- Modify the regulations for all IDR plans in § 685.209 to automatically enroll any borrowers who are at least 75 days delinquent on their loan payments in the IDR plan for which the borrower is eligible and that produces the lowest monthly payments for them.
- Modify § 685.209 to limit eligibility for the PAYE plan to borrowers who began repaying under the PAYE plan before the effective date of these regulations and who continue to repay on that plan, and to limit eligibility for the ICR plan to (1) borrowers who began repaying under the ICR plan before the effective date of these regulations and who continue to repay on that plan, and (2) borrowers whose loans include a Direct Consolidation Loan made on or after July 1, 2006, that repaid a parent PLUS loan.
- Make conforming changes to §§ 685.102, 685.210, 685.211, and 685.221 based on revisions to the sections noted above.

#### Significant Proposed Regulations

We discuss substantive issues under the sections of the proposed regulations to which they pertain. Generally, we do not address proposed regulatory provisions that are technical or otherwise minor in effect.

#### Income-Driven Repayment (§§ 685.208 and 685.209)

*Statute:* Section 455(d) of the HEA provides that the Secretary will offer a variety of plans for repayment of eligible Direct Loans, including principal and interest on the loans. Section 455(d)(1)(D) of the HEA requires the Secretary to offer an income-contingent repayment plan with varying annual repayment amounts based on the borrower's income, paid over an extended period of time prescribed by the Secretary, not to exceed 25 years. Section 455(e)(4) of the HEA authorizes the Secretary to establish income-contingent repayment plan procedures and repayment schedules through regulations. Section 455(e)(2) provides that a repayment schedule for a Direct Loan that is repaid pursuant to income-contingent repayment is based on the AGI (as defined in section 62 of the Internal Revenue Code of 1986) of the borrower or, if the borrower is married and files a Federal income tax return jointly with the borrower's spouse, on the AGI of both the borrower and the borrower's spouse. Section 455(d)(7) of the HEA identifies the periods that the Secretary must include in the

calculation of the maximum repayment period under the ICR repayment plans. This section does not specifically limit the calculation to only those periods or specifically preclude the Secretary from using the regulatory authority to add additional periods. Additionally, Section 410 of the General Education Provisions Act (20 U.S.C. 1221e-3) provides the Secretary with authority to make, promulgate, issue, rescind, and amend rules and regulations governing the manner of operations of, and governing the applicable programs administered by, the Department. Furthermore, under section 414 of the Department of Education Organization Act (20 U.S.C. 3474), the Secretary is authorized to prescribe such rules and regulations as the Secretary determines necessary or appropriate to administer and manage the functions of the Secretary or the Department.

*Current Regulations:* Section 685.209 provides for three income-contingent repayment plans in which a borrower's monthly payment amount is based on their AGI, loan debt, and family size. Those plans are the ICR, PAYE, and REPAYE plans. Additionally, § 685.221 provides for the IBR plan.

The current regulations in § 685.208(k) provide for a discretionary income amount for the ICR plan of the borrower's AGI minus the amount for the Federal poverty guidelines for the borrower's family size. For the IBR, PAYE, and REPAYE plans, the current regulations provide for a discretionary income amount of the borrower's AGI minus 150 percent of the Federal poverty guidelines for the borrower's family size.

The current regulations for PAYE, REPAYE, and IBR, at §§ 685.209(a)(1)(i), 685.209(c)(1)(i), and 685.221(a)(1), define "adjusted gross income" as the AGI as reported to the Internal Revenue Service (IRS). For all three plans, the AGI of married borrowers filing jointly includes both the borrower's and the spouse's income. For PAYE and IBR, the AGI of married borrowers filing separately includes only the borrower's income; for REPAYE, it includes the AGI of the borrower and the spouse, unless the borrower certifies that they are separated from or unable to access the spouse's income. For the ICR plan, the current regulations at § 685.209(b)(1)(iii)(A) refer to income as the borrower's AGI. The current regulations also provide, at §§ 685.209(a)(5)(i)(B), 685.209(b)(3)(i), 685.209(c)(4)(i)(A), and 685.221(e)(1)(ii), that borrowers may submit alternative documentation if the AGI is not available or does not reasonably reflect the borrower's current income.

The current regulations include the PAYE, REPAYE, and ICR plans within § 685.209; and the IBR plan in § 685.221. The term "income-driven repayment" is not used in the current regulations.

Under current regulations, monthly payment amount formulas are established for each of the IDR plans, but there is no definition of a monthly payment. Current regulations at §§ 685.209(a)(1)(iv), 685.209(c)(1)(iii), and 685.221(a)(3) provide that a borrower's "family size" includes individuals other than a spouse or children if such individuals receive more than half of their support from the borrower. The IBR regulations in § 685.221(a)(3) specify that support includes money, gifts, loans, housing, food, clothes, car, medical and dental care, and payment of college costs. Section 685.208 provides general repayment plan information and specifies which types of Direct Loans may be repaid under the various Direct Loan repayment plans. This section of the current regulations also describes the terms and conditions of the standard, graduated, extended, and alternative repayment plans, and includes high-level summaries of the terms of the income-contingent repayment plans and the IBR plan.

For the REPAYE plan, § 685.209(c)(1)(ii) defines an "eligible loan" for the purposes of adjusting a borrower's monthly payment amount as any outstanding loan made to a borrower under the Direct Loan Program or the FFEL Program except for a defaulted loan or any Direct PLUS Loan or Federal PLUS Loan made to a parent borrower or any Direct Consolidation Loan or Federal Consolidation Loan that repaid a PLUS loan made to a parent borrower.

Section 685.209(c)(2)(ii)(B) provides that if a married borrower and the borrower's spouse each have eligible loans, the Secretary adjusts the borrower's REPAYE plan monthly payment amount by determining each individual's percentage of the couple's total eligible loan debt and then multiplies the borrower's calculated monthly payment amount by this percentage.

Section 685.209(c)(3)(iii) specifies when the annual notification for income recertification must be sent to a borrower, the date that documentation should be received by the Secretary, and the consequences if documentation is not received within 10 days of the annual deadline specified in the notice.

Sections 685.210(a)(1) and 685.210(b) establish the requirements for borrowers when they choose a repayment plan,

including the procedures for initial selection of a plan and for changing plans. Section 685.210(a)(2) authorizes the Secretary to designate the standard repayment plan for a borrower who does not select a plan before they enter repayment.

In § 685.211, which addresses miscellaneous repayment provisions, § 685.211(a) describes how payments and prepayments are applied in the different repayment plans and § 685.211(b) provides that, to encourage on-time repayment, the Secretary may reduce the interest rate for a borrower who repays a loan under a repayment plan or on a schedule that meets the requirements specified by the Secretary.

Section 685.221 describes the IBR plan, which is available to borrowers who have a partial financial hardship. Pursuant to § 685.221(b)(1), the borrower's aggregate monthly loan payments are limited to no more than 15 percent or, for a new borrower as of 2014, 10 percent, of the amount by which the borrower's AGI exceeds 150 percent of the poverty guideline applicable to the borrower's family size, divided by 12.

*Proposed Regulations:* The proposed regulations would simplify, clarify, and standardize the Direct Loan Program repayment regulations, including organizing the regulations by repayment plan type. In particular, the regulations would significantly revise the terms of the REPAYE plan to address a range of identified shortcomings in the current IDR plans and limit future enrollment of student borrowers into other repayment plans created by regulation. This would simplify borrowers' repayment choices. In addition, the Department proposes to revise other provisions related to the IBR and ICR plans to make it easier for borrowers to make progress toward forgiveness.

Proposed revised § 685.208 would be retitled "Fixed payment repayment plans" and would cover the standard, graduated, and extended repayment plans, which are plans under which monthly payments are based on repayment period, loan debt, and interest rate.

The Department proposes to remove provisions related to the ICR plan, the alternative repayment plan, and the IBR plan from § 685.208(k), (l), and (m), and to remove the regulations governing the IBR plan from § 685.221. We propose to include the regulations governing all of the IDR plans in revised § 685.209, which would be retitled "Income-driven repayment plans." Proposed revised § 685.221 would contain the regulations governing the alternative repayment plan that are currently in § 685.208(l). In

proposed § 685.209(f)(1), (h)(i), and (k)(i)–(ix), the Department proposes to modify the REPAYE plan to increase the amount of discretionary income exempted from the calculation of payments to 225 percent of the applicable poverty guideline, reduce monthly payment amounts as a percentage of discretionary income from 10 percent to 5 percent for the share of a borrower's total original loan principal volume attributable to outstanding loans received by the borrower to pay for an undergraduate program, not charge any remaining accrued interest after applying a borrower's monthly payment, and reduce the time to forgiveness under the plan for borrowers to as short as the equivalent of 10 years of qualifying payments for those with original loan balances of \$12,000 or less.

The Department proposes a definition of “discretionary income” in § 685.209(b) that would increase the discretionary income threshold, exempting a greater portion of borrowers' incomes from the determination of payment amount, for the REPAYE plan. Discretionary income would be defined as the borrower's AGI minus 225 percent of the Federal poverty guidelines for the borrower's family size.

The Department proposes to clarify that, for all IDR plans, “income” means the borrower's AGI and, if applicable, the spouse's income, as reported to the IRS. The definition of income would also provide that, instead of AGI, the Secretary may accept an amount calculated based on alternative documentation of all forms of taxable income received by the borrower.

The proposed regulations would establish a new definition of “income-driven repayment plans.” That proposed definition would specify that an IDR plan is one in which the monthly payment amount is primarily based on the borrower's income.

The Department proposes to establish a new definition of “monthly payment or the equivalent” in § 685.209(b) that would define a monthly payment as the required payment made under one of the IDR plans; a month in which a borrower receives certain deferments or forbearances under one of the conditions in proposed § 685.209(k)(4)(iv)(A) through (J); or a month in which a borrower makes a payment in accordance with the procedures in proposed § 685.209(k)(6). Under proposed § 685.209(k)(6)(i), borrowers participating in any of the IDR plans would be able to apply toward the time required for forgiveness any period of deferment or forbearance that is not otherwise eligible to be

counted toward forgiveness if the borrower makes a payment equal to or greater than the amount that would have been required during that period on any income-driven repayment plan, including, pursuant to § 685.209(k)(4)(i), a payment of \$0.

The proposed regulations would establish a stand-alone definition of “support” in proposed § 685.209(b) that mirrors the definition in the current IBR regulations at § 685.221(a)(3).

Under § 685.209(k)(5), the Department proposes to amend the terms of the IBR plan to allow borrowers in default to make payments under the IBR plan that would count toward loan forgiveness.

Proposed § 685.209(k)(4)(v) would apply to all IDR plans and would provide that a borrower's progress toward forgiveness does not fully reset when a borrower consolidates one or more Direct or FFEL Program Loans into a Direct Consolidation Loan, as it does under current regulations. Instead, the Department would determine how many qualifying payments the borrower made on the loans consolidated, and then assign a qualifying payment count to the Direct Consolidation Loan that is based on the weighted average of the qualifying payments, using the loan balance as the weighting factor (as it is also used to prorate borrower-level IDR payments down to the loan level).

Proposed § 685.209(m)(3) would provide that any student borrower who is at least 75 days delinquent on their loan payments would be automatically enrolled in the IDR plan that results in the lowest monthly payment based on the borrower's income and family size, as long as the borrower has provided approval for the disclosure of tax information, the borrower otherwise qualifies for the plan, and that the IDR plan would lower the borrower's payment.

Under § 685.209(c)(2), the Department proposes to modify the eligibility requirements of the IBR plan to limit eligibility for this plan to borrowers who have a partial financial hardship and who have not made 120 qualifying payments on the REPAYE plan on or after the effective date of the regulation.

Under § 685.209(c)(3), the Department proposes to modify the eligibility requirements of the PAYE plan to limit eligibility for this plan to borrowers enrolled in the PAYE plan as of the effective date of the regulation.

Under § 685.209(c)(4), the Department also proposes to modify the eligibility requirements of the ICR plan to limit eligibility for this plan to borrowers currently enrolled in the ICR plan as of the effective date of the regulations, or to borrowers whose loans include a

Direct Consolidation Loan that repaid a Parent PLUS loan.

The Department proposes to amend §§ 685.102, 685.210, 685.211, and 685.221 to include conforming changes based on revisions to the sections noted above. We also propose to make technical corrections to §§ 685.219, 685.220, 685.222, and 685.403 for consistency with the changes related to interest capitalization in the Affordability and Student Loans Final Rule.

#### Reasons

##### Definitions (§ 685.209(b))

For ease of understanding, the Department has combined all of the IDR plans in proposed § 685.209. This would ensure all the relevant information is available to borrowers and other stakeholders in a single location in the regulations.

The Department has proposed to incorporate into the definition of “discretionary income” an increase in the amount of the discretionary income level for the REPAYE plan, exempting more of borrowers' incomes from being used to calculate their monthly payment amounts on that plan. As discussed elsewhere in this NPRM, the Department is concerned that payments remain unaffordable on IDR plans for too many borrowers. By definition, borrowers in poverty have family financial resources insufficient to meet the costs of basic necessities and should not be expected to afford any amount of loan payments. The Department sought to define the level of necessary income protection by assessing the level where rates of financial hardship are significantly lower than the rate among those in poverty. Based upon an analysis discussed further in the Income Protection Threshold section of this document, the Department found that point to be 225 percent of the Federal poverty guidelines.

To simplify the definition of “income,” the Secretary has proposed to clarify that the Secretary will rely on the borrower's AGI, the spouse's AGI, if applicable, or alternative documentation of the borrower's income. These changes are largely technical, designed to streamline the regulations and ensure consistency in the language.

The Department has proposed to add a definition of “IDR plans” to ensure clarity in the new organization of the regulations, which places all IDR plans in § 685.209.

The Department is concerned that the current approach to defining a monthly payment is too narrow. Some borrowers are forced to choose between accessing



a deferment or forbearance for which they qualify or losing out on progress toward forgiveness. In some cases, borrowers have found it difficult to navigate those decisions. As described later in this NPRM, the Department has proposed to include certain deferments and forbearances as the equivalent of a qualifying payment, ensuring borrowers will continue to receive progress toward forgiveness. We also propose to establish procedures that would provide borrowers with some greater flexibility in such cases. This definition would incorporate both such circumstances into the definition of a “monthly payment or equivalent.”

The inclusion of a proposed definition of “support” would ensure greater consistency in the treatment of borrowers’ family size across IDR plans, providing for a single and consistent defined term. The proposed language itself reflects existing language for the IBR plan.

#### Borrower Eligibility for IDR Plans (§ 685.209(c))

The Department is not proposing to change which types of loans are eligible to be repaid under the different IDR plans. We propose to maintain the current practice in which all types of Direct Loans to students are eligible to be repaid on the REPAYE plan. With regard to parent PLUS loans, the HEA states that such loans may not be repaid under an ICR plan or the IBR plan, and Direct Consolidation Loans that repaid a parent PLUS loan may not be repaid under the IBR plan. However, a Direct Consolidation Loan disbursed after July 1, 2006, that repaid a parent PLUS loan may be repaid under an ICR plan (but not under any of the other IDR plans).

The Department is proposing additional eligibility changes to streamline the repayment options available to borrowers. As part of the Department’s goal of creating an IDR plan that is the best option for borrowers, we propose to limit future enrollment in the PAYE or ICR plans after the effective date of these regulations. The Department proposes limiting enrollment in PAYE to borrowers enrolled on that plan as of the effective date of these regulations so long as the borrowers stay enrolled on that plan. Borrowers who have not yet signed up for PAYE by the effective date of these regulations, or those who leave

the plan, would not be eligible to sign up for it after the effective date of these regulations. The Department proposes the same change with respect to ICR with one exception. Borrowers with a Direct Consolidation loan made on or after July 1, 2006, who repaid a parent PLUS loan could continue to choose the ICR plan after the effective date of these regulations.

The Department believes these changes would help accomplish its goal of simplifying repayment options for borrowers. With this change, all student borrowers in repayment would be able to access an IDR option through REPAYE, and many would be able to choose between two IDR options: IBR, for which the terms are specified in the statute, and REPAYE. The Department anticipates that REPAYE would provide the lowest monthly payments for essentially all low- or moderate-income student borrowers; this change would make it easier for borrowers to navigate repayment and enroll in the most affordable IDR plans.

The Department also proposes to limit the ability of borrowers to switch into IBR once they have completed 120 payments on REPAYE. Because the Department is proposing that borrowers with loans attributed to a graduate program must make 300 qualifying payments to receive forgiveness, we are concerned that a borrower might choose to make the lower payments available on REPAYE and then switch to IBR to receive immediate forgiveness. Doing so would run counter to the goals for the REPAYE plan, which is to reduce payments for all borrowers but still require borrowers with graduate loans to pay longer before receiving forgiveness. As graduate borrowers generally have larger balances than undergraduate borrowers, this helps to ensure that both groups repay a similar share of their balances. In addition, by preventing borrowers from switching after 120 payments, we propose to give borrowers ample time to decide between making lower payments on REPAYE or the possibility of forgiveness after the equivalent of 20 years on IBR.

#### Income Protection Threshold (§ 685.209(f))

Several non-Federal negotiators argued that a larger amount of borrowers’ income should be excluded from the formula for calculating

monthly payments. They stated that the current protection level in the PAYE and REPAYE plans of 150 percent of the poverty guideline (\$20,385 for a single individual and \$41,625 for a family of four in 2022) is not adequate to ensure low-income borrowers can afford their basic needs and that the amount of income protection should be increased.<sup>11</sup> Some of the non-Federal negotiators argued that the threshold should be 250 percent of the poverty guideline, while several others suggested that 400 percent of the poverty guideline would be more appropriate, especially in areas where the cost of living is substantially higher.<sup>12</sup>

The Department agrees with the non-Federal negotiators that the current amount of income protected is too low. Accordingly, in § 685.209(f)(1), the Department proposes to increase the amount of discretionary income exempted from the calculation of payments in the REPAYE plan to 225 percent of the Federal poverty guideline. The Department chose this threshold based on an analysis of data from the Survey of Income and Program Participation (SIPP) for individuals who are aged 18–65 who attended college and who have outstanding student loan debt. The Department looked for the point at which the share of those who report material hardship—either being food insecure or behind on their utility bills—is statistically different from those whose family incomes are at or below the Federal poverty guidelines.<sup>13</sup> The results of this analysis are shown in Table 1 below.

<sup>11</sup> <https://www2.ed.gov/policy/highered/reg/hearulemaking/2021/107pm.pdf>, p. 64.

<sup>12</sup> <https://www2.ed.gov/policy/highered/reg/hearulemaking/2021/108am.pdf>, p. 28.

<sup>13</sup> Department analysis of data from the Survey of Income and Program Participation, Census Bureau. For more on the SIPP, please see: <https://www.census.gov/programs-surveys/sipp.html>. The data track a subset of proxies for material hardship. We focus on two measures commonly used in the literature on material hardship and poverty: food insecurity and being behind on utility bills. We focus on differences in these measures across income categories relative to rates of hardship for individuals living in poverty, rather than comparing the absolute levels to any particular reference standard. We avoid interpretation of the absolute level since the measures do not offer a comprehensive indication of hardship; it should not be inferred, for example, that individuals who do not report these two measures of hardship experience no material hardships.

TABLE 1—RATES OF MATERIAL HARDSHIP BY FAMILY INCOME GROUPS RELATIVE TO POOR INDIVIDUALS

Family income as a multiple of the Federal Poverty Line (FPL) <sup>14</sup>	Fraction who are food insecure or behind on bills
Poor (family income <100% FPL) .....	** 0.279 (0.016)
Rate of material hardship relative to families in poverty	
100–125% FPL .....	0.040 (0.039)
125–150% FPL .....	0.000 (0.033)
150–175% FPL .....	– 0.037 (0.032)
175–200% FPL .....	– 0.046 (0.033)
200–225% FPL .....	– 0.060 (0.033)
225–250% FPL .....	** – 0.088 (0.033)
250–275% FPL .....	** – 0.151 (0.025)
275–300% FPL .....	** – 0.167 (0.028)
300–325% FPL .....	** – 0.148 (0.024)
325–350% FPL .....	** – 0.180 (0.025)
350–375% FPL .....	** – 0.189 (0.024)
375–400% FPL .....	** – 0.188 (0.025)
400–450% FPL .....	** – 0.219 (0.021)
450–500% FPL .....	** – 0.224 (0.018)
500–600% FPL .....	** – 0.230 (0.019)
600–700% FPL .....	** – 0.243 (0.017)
>700% FPL .....	** – 0.247 (0.016)
N .....	13,513

\*\*  $p < 0.01$

**Note:** Analysis based on 2020 Survey of Income and Program Participation. In the analysis, an indicator for whether an individual experiences material hardship (*i.e.*, reports either being food insecure or behind on bills) is regressed on a constant term and a series of indicators corresponding to categories of family income relative to the Federal poverty line. Both hardship and family income are measured during 2019. The estimation sample includes individuals aged 18 to 65 who have outstanding education debt, are not enrolled as of December in the reference year (2019), and report at least some college experience. The first row of the table displays the estimated coefficient on the constant term, showing that about 27.9 percent of individuals in poverty experience material hardship. Subsequent rows show the estimated difference in the rate of material hardship for each income group relative to those in poverty. Standard errors shown in parentheses are estimated using replicate weights from the Census that account for the SIPP survey design, and 2 stars denote estimated coefficients that are statistically different from zero at the 0.01 significance level.

Based upon this analysis, individuals with family incomes up to and including 225 percent of the Federal poverty guidelines have rates of material hardship that are statistically indistinguishable from borrowers with income below 100 percent of the Federal poverty guidelines. Drawing on these results, we believe borrowers with income below 225 percent of the Federal poverty guidelines should not be expected to make loan payments.

Moreover, the 225 percent threshold would be better aligned with the minimum wage in many States. Assuming an average of 2,000 hours worked in a year, an individual who makes 150 percent of the poverty guideline for a single-person household is earning \$10.19 an hour. That is below the minimum wage in 22 States plus the District of Columbia and less than \$0.25 above the rate for three other States.<sup>15</sup> Combined, those 25 States plus the District of Columbia are home to 56 percent of Americans aged 25 or older with at least some college education.<sup>16</sup>

By contrast, a threshold of 225 percent of the poverty guideline represents an hourly wage of \$15.28 in 2022 for a single-person household. At this level, the REPAYE plan would continue to protect the amount a single minimum-wage worker with no dependents would earn in every State in 2023.<sup>17</sup> The higher income protection amount would also address the Department’s concern that a too-high payment amount is one reason that many borrowers fall behind on their payments or default on their loans, despite the availability of IDR plans. This concern is particularly germane to lower-income borrowers, who cannot afford to repay at all. The Department believes that protecting more of a borrower’s income, coupled with other proposed regulatory changes related to auto-enrollment for delinquent borrowers, would result in more low-income borrowers enrolling in IDR and in fewer defaulting on their student loans. Increasing the income protection threshold would better achieve the goals of IDR, allow more low-income

borrowers to qualify for \$0 monthly payments, and allow more borrowers to cover the cost of necessities without becoming delinquent on their student loans.

Payment Amounts (\$ 685.209(f))

Many non-Federal negotiators also emphasized the need to reduce the required payments for borrowers on IDR plans. This included some suggestions that the Department should limit all payments to 5 percent of a borrower’s discretionary income. Qualitative research shows that high numbers of borrowers on IDR plans still find their payments to be unaffordable,<sup>18</sup> and the most common complaint received by the Department from borrowers on the structure of IDR plans is that their payments are still unaffordable on those plans.

Borrowers who struggle to repay their student loans are likely to have a lower payment option on IDR than other repayment plans. If the payment amount under IDR is still not affordable, then a borrower may not be able to make any payments and, as a result, end up in

<sup>14</sup> This table uses the phrase Federal Poverty Line in place of the term Federal Poverty Guidelines.

<sup>15</sup> <https://www.dol.gov/agencies/whd/mw-consolidated>.

<sup>16</sup> U.S. Census Bureau, “Table S1501: Educational Attainment,” 2020 ACS 5-year estimates, <https://>

[data.census.gov/cedsci/table?q=education%20by%20state&tid=ACST5Y2020.S1501&moe=false&tp=true](https://data.census.gov/cedsci/table?q=education%20by%20state&tid=ACST5Y2020.S1501&moe=false&tp=true).

<sup>17</sup> <https://www.dol.gov/agencies/whd/minimum-wage/state>.

<sup>18</sup> <https://www.pewtrusts.org/en/research-and-analysis/reports/2022/02/redesigned-income-driven-repayment-plans-could-help-struggling-student-loan-borrowers>.

delinquency or default. When that occurs, the IDR plans do not achieve their goals of establishing affordable payments for borrowers. By contrast, requiring a lower monthly payment amount would increase the likelihood that a borrower can afford and will make their required payments. Research has shown that usage of existing IDR plans reduces delinquencies by 33 percentage points.<sup>19</sup> Offering lower payment amounts under the REPAYE plan than those available on the other IDR plans would also contribute to the goals of being affordable based on income and family size, as well as providing the lowest payment option of any IDR plan for almost all borrowers.

In proposed revisions to the REPAYE plan in § 685.209(f)(1)(ii), the Department proposes to reduce—to 5 percent of discretionary income—the payment on the share of a borrower's total original loan principal balance that is attributable to loans they received as a student in an undergraduate program. Under proposed § 685.209(f)(1)(iii), borrowers would continue to pay 10 percent of their discretionary income on the share of their total original principal loan balances attributable to loans they received as a student in a graduate program that are still outstanding when the borrower begins using the REPAYE plan. Borrowers who have outstanding loans for both undergraduate and graduate programs would pay an amount between 5 and 10 percent based upon the weighted average of their original principal loan balances, regardless of whether the loans have been consolidated or not. For example, a borrower who has \$20,000 in loans received as a student for undergraduate study and \$60,000 in loans received as a student for graduate study would pay 8.75 percent of their discretionary income, while one who has \$30,000 from their undergraduate education and \$10,000 from their graduate education would pay 6.25 percent of their discretionary income. The Department proposes to use the original principal loan balance a borrower received for these calculations so that it would be easier for a borrower to understand how their payment rate is calculated and so that future borrowers can factor this information into decisions about how much to borrow. This calculation would only be based on loans that are still outstanding.

The Department proposes to treat loans attributed to undergraduate programs differently than graduate programs for several reasons. First, there

are lower annual and cumulative limits on loans for undergraduate borrowers than there are for loans for graduate borrowers. Graduate and professional students are eligible to receive Direct PLUS Loans in amounts up to the cost of attendance established by the school they are attending, less other financial aid received. The lack of specific dollar limits on the amount of PLUS loans for graduate students means borrowers can take on significantly more debt for those programs than they can for undergraduate programs. The Department is concerned that setting payments at 5 percent of discretionary income for graduate loans could result in borrowers taking on significant additional debt that they will not be able to repay. The Department is not concerned that keeping the rate at 10 percent for graduate loans would create a further incentive for additional borrowing because that is the same rate that is already available to graduate borrowers on several different IDR plans. We do not, however, propose to increase the payment rate for graduate borrowers above the current REPAYE threshold of 10 percent. The Department is concerned that setting a higher payment rate for graduate borrowers—beyond what is available on IBR for new borrowers, PAYE, and the existing REPAYE plan—would not result in a plan that is clearly the best IDR option for most student borrowers. That would result in the Department not achieving its desired goal of making it easier for borrowers to navigate repayment.

Second, the Department is more concerned about the potential for undergraduate borrowers to struggle with delinquency and default than it is for graduate borrowers. Department data on borrowers in default as of December 31, 2021 show that 90 percent of borrowers who are in default on their Federal student loans had only borrowed for their undergraduate education. Just 1 percent of borrowers who are in default had loans only for graduate studies. Similarly, just 5 percent of borrowers who only have graduate debt are in default on their loans, compared with 19 percent of those who have debt from undergraduate programs.<sup>20</sup>

The Department proposes reducing the share of discretionary income a borrower would pay on their loans that are attributable to an undergraduate program to 5 percent as a way of addressing several concerns raised by

negotiators and public commenters during the negotiated rulemaking process, as well as concerns identified through focus groups of borrowers and reviews of complaints received by the Ombudsman's office within the office of Federal Student Aid (FSA). In the former category, the Department heard repeatedly about concerns that the current amount of income required to be devoted to payments is too high and that it is a particular challenge for borrowers who are located in areas with higher costs of living, because current IDR formulas do not consider expenses. In the latter category, the Department has heard from borrowers who noted that they were willing to make payments on their loans but could not afford amounts as large as what current formulas calculate. A survey conducted by the Pew Charitable Trusts also found that almost half of borrowers surveyed who had been or were enrolled in an IDR plan at the time of the survey still found their monthly payments unaffordable.<sup>21</sup>

The Department proposes the reduction of payments to 5 percent to address these concerns through the REPAYE plan. The Department does not think it would be feasible to vary the amount of student loan payments by locality because it would introduce significant operational complexity and result in inconsistent borrower treatment across the country. Attempting to conduct individualized analyses of a borrower's expenses would create similarly significant challenges to the point of being impossible for the Department to administer. Reducing the share of discretionary income applied to the payment amount would, however, have a similar effect by providing borrowers with lower monthly loan payments.

The Department proposes reducing the share of discretionary income for loans obtained for undergraduate programs to 5 percent to ensure better parity between the payment reductions undergraduate borrowers receive from IDR, relative to the standard plan, compared to graduate borrowers. Because graduate borrowers generally have higher loan balances than undergraduate borrowers, if an undergraduate borrower and graduate borrower have the same income level, it is highly likely that the latter will have significantly larger reductions in

<sup>21</sup> Travis Plunkett, Regan Fitzgerald, Lexi West, Many Student Loan Borrowers Will Need Help When Federal Pause Ends, Survey Shows (July 15, 2021), <https://www.pewtrusts.org/en/research-and-analysis/articles/2021/07/15/many-student-loan-borrowers-will-need-help-when-federal-pause-ends-survey-shows>

<sup>19</sup> <https://www.aeaweb.org/articles?id=10.1257/app.20200362>.

<sup>20</sup> Department of Education analysis of loan data by academic level for total borrower population and defaulted borrower population, conducted in FSA's Enterprise Data Warehouse, with data as of December 31, 2021.

monthly payments than they would have on the 10-year standard plan due to IDR than the former if undergraduate and graduate loans are treated the same.

An example highlights how using the same share of income for payments by undergraduate and graduate borrowers creates inequities. All of these figures are based upon the 2015–16 National Postsecondary Student Aid Study and use the 2016 Federal poverty guideline of \$11,880 for a single individual. Consider two borrowers: Borrower A finished an undergraduate program with the median amount of Federal loan debt for an undergraduate borrower (\$20,062), while Borrower B finished a graduate program with the median amount of debt for a graduate program (\$41,000). Borrower A's loans have a 4 percent interest rate, while Borrower B's are at 5.55 percent, the same difference in interest rates between undergraduate and graduate Direct Stafford loans that currently exists in statute. They both earn \$50,000 and are the only members of their households. As a result, they would have equal payments of \$162 per month in an IDR plan that uses the proposed 225 percent of the Federal poverty level as the income protection threshold and charges 10 percent of discretionary income. However, for Borrower A, this is just \$41 less than the \$203 they would pay on the 10-year standard plan. Borrower B, however, pays \$284 less because their 10-year standard plan payment would have been \$446. In fact, if both borrowers made \$60,000, then Borrower A would pay \$42 more per month under IDR than on the 10-year standard plan, while Borrower B would still pay \$200 less.

The Department is concerned that using the same payment rate (as a share of discretionary income) to determine payment amounts for undergraduate and graduate borrowers would thus result in inequities between the two, whereby an undergraduate borrower would receive lower payment reductions relative to the 10-year standard repayment plan. It is not possible to fix this problem by equalizing the amount that monthly payments decrease, since the underlying payments on a 10-year standard plan for higher-balance loans will always be larger than those for lower-balance loans.

Instead of trying to equalize decreases in monthly payments, the Department calculated how to construct a payment formula in which the income at which an undergraduate borrower who completes their program with median debt ceases to benefit from IDR is equal to the income at which the graduate borrower who completes their program

with median debt also ceases to benefit. Put another way, the Department looked at what share of discretionary income would ensure that a borrower with only the typical level of graduate loan debt could not benefit more at higher incomes than a borrower with only undergraduate loan debt.

To calculate that point, the Department first determined how much a graduate borrower in a single-person household with the median graduate loan balance could earn and still benefit from IDR. Another way to think of this is, “What is the income level at which the payment calculated for IDR is equal to the payment on the 10-year standard plan?” For graduate borrowers, we used \$41,000, which is the median amount of Federal loans borrowed for graduate school among students who borrowed for graduate school and finished their program in 2015–16.<sup>22</sup> While this includes any completer who has Federal loan debt for graduate school in this year, we intentionally did not include undergraduate debt held by these borrowers, in order to address potentially differential treatment between a borrower who only has undergraduate debt from one who only has graduate debt. Based on that \$41,000 amount, the income level for a single individual where they cease seeing a payment reduction under IDR is approximately \$80,000 in 2016. Next, the Department performed the same calculation for a borrower with the median undergraduate debt amount of \$20,062, varying the discretionary income amount in whole percentage points in descending order from 10 percent.<sup>23</sup> The Department found that a payment rate equal to 5 percent of discretionary income would allow a single borrower with only undergraduate loans up to \$75,500 in 2016 income to receive benefits. That number is closer to the figure for a graduate borrower than 4 percent would be (\$87,700). Accordingly, the Department believes charging borrowers 5 percent of discretionary income for the undergraduate portion of their debt provides the appropriate amount to ensure greater parity between graduate and undergraduate borrowers, in terms of their incentives to choose an IDR plan.

<sup>22</sup> Department analysis of data from the National Postsecondary Student Aid Study 2015–16 using the PowerStats web tool at <https://nces.ed.gov/datalab/>. Table ID: rlaubc.

<sup>23</sup> Department analysis of data from the National Postsecondary Student Aid Study 2015–16 using the PowerStats web tool using the PowerStats web tool at <https://nces.ed.gov/datalab/>. Table ID: zonpin.

By providing reduced payments for loans that a borrower received as a student in an undergraduate program, the proposed regulations would better target the benefits of the changes to IDR toward those who are more likely to struggle with their debt. A borrower who has only obtained loans for their graduate studies would still benefit from several other provisions in the IDR payment plans. These benefits include the larger amount of income protected from payments, not charging borrowers any remaining accrued interest after applying their monthly payment, and counting time spent in several deferments and forbearances toward forgiveness. The Department believes the approach to lower payments for undergraduate loans is preferable to setting an even higher income exemption than the 225 percent of the Federal poverty guideline proposed in this regulation. As noted in the discussion on the rationale for the 225 percent threshold, that is the point at which the share of those who report material hardship—being either food insecure or behind on their utility bills—is statistically different from those whose family incomes are at or below the Federal poverty guidelines. The Department thus believes it is appropriate for borrowers to make payments once their incomes exceed that 225 percent threshold. However, we want to make sure the payment a borrower makes when their income exceeds that threshold is affordable. This change thus accomplishes that goal.

In proposing reductions in the payment rate solely for undergraduate loans, the Department is consciously emphasizing greater benefits for borrowers who have undergraduate debt compared to those who only have debt for graduate school. As borrowers' monthly payments are based on the ratio of their undergraduate borrowing to their graduate borrowing, borrowers with the highest ratios of undergraduate to graduate borrowing would have the lowest monthly payments, even if they borrowed more overall. While graduate school can provide significant benefits, the Department is concerned that the majority of low-income students need to take out student loans in order to complete an undergraduate education—particularly if they want to obtain the bachelor's degree that is a necessary precursor to graduate school. For instance, data from the 2015–16 National Postsecondary Student Aid Study (NPSAS) show that 84 percent of Pell Grant recipients who completed a bachelor's degree that year also had

Federal loan debt compared to 51 percent of those who did not receive Pell.<sup>24</sup> Not surprisingly then, approximately two-thirds of borrowers who obtained a bachelor's degree in 2015–16 also received a Pell Grant.<sup>25</sup>

Setting payments at 5 percent of discretionary income for the portion of loans attributed to undergraduate education means that a lower-income borrower who has to take on debt for their undergraduate and graduate education, and thus ends up with a larger debt balance than someone who only had to borrow for graduate school, is not penalized the way they would be if the share of income was calculated based upon the total debt held or some similar way of calculating payments. The Department does not believe that this possibility would encourage many borrowers to take on significantly more undergraduate debt to lower possible future graduate loan payments. For one, many undergraduate students do not plan to attend graduate school. Second, for those planning to attend graduate school, the strict loan limits for undergraduate student borrowers would limit how much more they could borrow.

#### Interest Benefits (§ 685.209(h))

Proposed § 685.209(h) would address how the Secretary charges the remaining accrued interest to a borrower if the borrower's calculated monthly payment under an IDR plan is insufficient to pay the accrued interest on the borrower's loans. For the REPAYE plan, the Department proposes to not charge any remaining accrued interest to a borrower's account each month after applying a borrower's payment.

This would be an expansion of the current REPAYE plan interest benefit, which covers all of the remaining interest on subsidized loans only for the first 3 years of repayment in the plan, and then 50 percent of the remaining interest on subsidized loans after the first 3 years. For unsubsidized loans, the current REPAYE plan interest subsidy benefit covers 50 percent of the remaining interest during all years of repayment under the plan.

The Department proposes to increase the interest benefit due to concerns that the current structure of IDR plans risks discouraging borrowers from selecting the plans in the first place or from

continuing to pay on them due to loan balance growth. The current IDR plans allow borrowers to pay less each month than what they would under the 10-year standard plan and, in the case of IBR and PAYE, require borrowers to have monthly payments below what they would owe on the 10-year standard plan. Unlike the standard, extended, or graduated plans, there is no requirement that monthly payments be sufficient to at least cover the amount of interest that accumulates each month. While most IDR plans do not charge some of the accumulating interest, the remaining portion of interest continues to accrue and over years that amount of interest accrual may be significant. As a result, many borrowers make their required payments each month but still see their balances continue to grow. In fact, the Department estimates that 70 percent of borrowers on existing IDR plans have seen their balances grow after entering those plans.<sup>26</sup>

The Department is concerned that growing balances due to unpaid interest may discourage borrowers from repaying their loans and, thus, result in lower amounts repaid to the government. Focus groups conducted by the Pew Research Center have found that interest accrual is a common source of borrower frustration and creates negative incentives for borrowers to stick with loan repayment.<sup>27</sup> Those same focus groups found that interest accrual created “psychological and financial barriers to repayment,” as borrowers lost motivation to repay and felt that they were trapped in debt indefinitely. Focus groups conducted by New America in 2015 similarly found that while borrowers understood the concept of how interest works, the rate of accrual and seeing balances continuing to increase had negative effects, such as higher-than-anticipated loan balances due to interest that would accrue while they were enrolled in school, during a loan deferment, or during a forbearance.<sup>28</sup> Those same focus groups found that while the borrowers who used IDR liked it, there were concerns about borrowers ending up paying far more than they would have repaid on the standard 10-year plan—an outcome that is a function of interest accumulation. Multiple annual reports from the FSA Ombudsman have

also found that borrowers struggle to understand how the different repayment plans work and the interplay between lower monthly payments and higher interest accumulation.<sup>29</sup> Because IDR plans are the only repayment options that have no long-term protections against negative amortization, the Department is concerned that continued balance growth on these plans could dissuade borrowers from enrolling or recertifying enrollment in these plans. The potential for these negative incentives could be even greater as a result of the increases in the amount of income protected from payments and the reduction in payments tied to undergraduate loan balances. Were the Department to leave the interest benefits unchanged, those payment reductions would result in even greater amounts of interest accumulation for borrowers. That would risk undermining the Department's overall goals of providing student borrowers with one clear IDR option. Not all of the interest that would no longer be charged under this proposal is a true new cost to the government. Borrowers whose incomes are particularly low relative to their debt balances would end up with significant interest accumulation that would be forgiven after the borrower makes the necessary number of qualifying payments. For those borrowers, not charging interest as it accumulates instead of forgiving it at the end of the IDR repayment term would have no additional cost to the government. And in doing so, it has the added benefit of encouraging increased repayment.

Not charging any remaining accrued interest to the borrower's account after applying a borrower's payment would also help the Department accomplish its overall goals of simplifying repayment. Adding this benefit would further cement REPAYE as the best IDR option for most student borrowers.

This change to the interest benefits would also remove a significant tradeoff for borrowers between choosing an IDR plan or one of the fixed repayment plans, none of which allow for monthly payments that are less than the amount of interest that accrues each month. Limiting interest accumulation would also increase the attractiveness of IDR relative to a discretionary forbearance. While borrowers on IDR would still have to make a payment, they would also not see the interest accumulation that happens to a borrower on a

<sup>24</sup> Department analysis of data from the National Postsecondary Student Aid Study 2015–16 using the PowerStats web tool at <https://nces.ed.gov/datalab/>. Table ID: dzzbcp.

<sup>25</sup> Department analysis of data from the National Postsecondary Student Aid Study 2015–16 using the PowerStats tool at <https://nces.ed.gov/datalab/>. Table ID: jbrlyl.

<sup>26</sup> Department of Education internal analysis of loan data for borrowers enrolled in IDR plans, conducted in FSA's Enterprise Data Warehouse, with data as of March 2020.

<sup>27</sup> [https://www.pewtrusts.org/-/media/assets/2020/05/studentloan\\_focusgroup\\_report.pdf](https://www.pewtrusts.org/-/media/assets/2020/05/studentloan_focusgroup_report.pdf).

<sup>28</sup> [https://static.newamerica.org/attachments/2358-why-student-loans-are-different/FDR\\_Group\\_Updated.dc7218ab247a4650902f7afd52d6cae1.pdf](https://static.newamerica.org/attachments/2358-why-student-loans-are-different/FDR_Group_Updated.dc7218ab247a4650902f7afd52d6cae1.pdf).

<sup>29</sup> [https://studentaid.gov/sites/default/files/FY\\_2019\\_Federal\\_Student\\_Aid\\_Annual\\_Report\\_Final\\_V2.pdf](https://studentaid.gov/sites/default/files/FY_2019_Federal_Student_Aid_Annual_Report_Final_V2.pdf); <https://studentaid.gov/sites/default/files/FSA-FY-2018-Annual-Report-Final.pdf>; <https://studentaid.gov/sites/default/files/fy2020-fsa-annual-report.pdf>.

discretionary forbearance. This may help more borrowers to enroll in this affordable repayment plan, and may then reduce student loan delinquencies and defaults, to the benefit of the Department and of taxpayers.

For borrowers who may have already experienced interest accumulation from being on an IDR plan, the Department notes that changes to the treatment of interest capitalization in the final rule published on November 1, 2022, 87 FR 65904, (Affordability and Student Loans Final Rule) will provide some assistance. That rule eliminated instances of interest capitalization when a borrower leaves the ICR, PAYE, or REPAYE plans. That means if a borrower decides those plans are no longer for them or they fail to recertify on time, they will not see their principal balance grow. We incorporated conforming changes here as part of our proposed changes to the IDR regulations.

That rule did not eliminate interest capitalization when a borrower leaves the IBR plan, including if they fail to recertify. However, the Department proposes to partly address this issue through the implementation of changes made in accordance with the FUTURE Act (Pub. L. 116–91), the Coronavirus Aid, Relief, and Economic Security (CARES) Act (Pub. L. 116–136), and the Consolidated Appropriations Act, 2021 (Pub. L. 116–260), which direct the IRS, upon the written request of the Department, to disclose to any authorized person tax return information to determine eligibility for recertifications for IDR plans. This will make it easier to automatically recertify a borrower's participation in IDR plans.

#### Deferments and Forbearances (§ 685.209(k))

The Department also proposes to provide credit toward IDR forgiveness for periods in which a borrower is in certain deferment and forbearance periods by treating those periods as a qualifying payment for the purposes of IDR. Overall, the Department's goal in providing credit toward forgiveness for some of these deferments and forbearances is to avoid situations in which a borrower is presented with conflicting benefits, in these cases an opportunity to pause payments or make progress toward ultimate loan forgiveness. There are many different benefits available to borrowers in navigating student loan repayment. This can create unintended consequences, such as confusing choices for borrowers by putting in conflict the benefits of pausing payments for specific activities or conditions, such as types of national

service or receiving certain medical care and making progress toward forgiveness. As a result, there are too many instances in which borrowers may inadvertently sacrifice months of credit toward forgiveness.

During the negotiated rulemaking sessions, the negotiators focused on proposals for providing credit toward forgiveness for each month when a borrower was in one of the identified types of deferment and forbearance. In addition, several of the negotiators felt it was important to retroactively apply the benefit for borrowers who received specific deferments and forbearances in the past.<sup>30</sup> The Department agrees that it is appropriate to allow certain past periods of deferment and forbearance to count toward forgiveness because of concerns that the Department's loan servicers did not provide appropriate guidance and assistance to borrowers to ensure that they understood the full consequences of their decisions to take a deferment or forbearance. We believe that many borrowers did not understand that, by taking out a deferment or forbearance, they were delaying the time in which they could have the loan forgiven. To address this history, we are proposing to give a borrower credit for specific periods of deferment or forbearance because those deferments and forbearance periods are most likely to be periods in which a borrower would have benefitted from an IDR plan if they had received proper advice. This change does not affect the borrower's past usage of these deferments or forbearances. Rather, when a borrower requests an IDR repayment plan after the effective date of these regulations, the Department would award credit for those prior periods spent in a deferment or forbearance.

This proposal aligns with administrative actions already announced by the Department to address concerns about past handling of deferments and forbearances. In April 2022, the Department announced it would make an administrative account adjustment to award credit to borrowers with Direct or FFEL Loans that we manage.<sup>31</sup> As part of that announcement, the Department announced that we would award credit toward forgiveness on IDR when a borrower spent more than 12 months consecutive or more than 36 months cumulative in forbearance. Similarly,

<sup>30</sup> <https://www2.ed.gov/policy/highered/reg/hearulemaking/2021/dec7pm.pdf>, p. 33.

<sup>31</sup> [https://www.ed.gov/news/press-releases/department-education-announces-actions-fix-longstanding-failures-student-loan-programs?utm\\_content=&utm\\_medium=email&utm\\_name=&utm\\_source=govdelivery&utm\\_term=](https://www.ed.gov/news/press-releases/department-education-announces-actions-fix-longstanding-failures-student-loan-programs?utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term=)

the Department would award credit toward IDR forgiveness for all periods spent in a deferment prior to 2013, excluding time spent in an in-school deferment. This reflects concerns that borrowers may not have been getting proper credit for economic hardship deferments.

Under current § 685.209, only time spent in an economic hardship deferment counts toward IDR forgiveness. However, borrowers who meet the eligibility criteria for certain other types of deferments might similarly be expected to have a \$0 payment if they were making payments under an IDR plan. For example, the unemployment deferment is available to borrowers who do not have a job and are actively seeking employment and who, therefore, might qualify for a \$0 IDR payment. Similarly, the rehabilitation training deferment requires a borrower to make a substantial commitment that could prevent them from working full-time, potentially resulting in a calculated IDR payment of \$0. Accordingly, we are proposing to count periods of unemployment and rehabilitation training deferment as the equivalent of making qualifying payments toward IDR plan loan forgiveness. We also seek feedback on whether, if possible to operationalize, the Department should include comparable deferments that are available under 34 CFR 685.204(j)(2) to Direct Loan borrowers who had an outstanding balance on a FFEL Program loan made before July 1, 1993, when they received their first Direct Loan.

In other situations, the Department proposes to provide credit toward forgiveness by counting deferments and forbearances as qualifying payments out of concern that borrowers should not have to face the tradeoff of using an opportunity to pause their payments for a specific situation versus continuing to make progress toward forgiveness. Allowing these deferments and forbearances to count toward IDR forgiveness would avoid the risk that a borrower could miss the opportunity to gain months or years of progress toward forgiveness by making the wrong choice or because they received inaccurate advice. Specifically, in proposed § 685.209(k)(4)(iv), the Department proposes to include deferments tied to military service, service in the Peace Corps, and post-active duty, and forbearances related to national service or National Guard Duty, because the Department is concerned that judging the relative tradeoffs between obtaining a deferment or forbearance and otherwise making progress toward forgiveness generates confusion for

borrowers and results in borrowers inadvertently losing months of progress toward forgiveness because of the complexity. The Department also proposes to provide credit toward forgiveness for time spent while the borrower is in a forbearance for loan repayment through the U.S. Department of Defense because of concerns about borrowers being confused about this benefit versus seeking forgiveness in IDR. Similarly, the Department is concerned about borrowers being able to successfully navigate between the cancer treatment deferment and IDR when they are ill and undergoing necessary medical care.

The Department also proposes to give credit toward forgiveness for periods in which a borrower has their payments paused for reasons outside their control. This would include periods of mandatory administrative forbearance when a servicer, not at the request of the borrower and for administrative reasons, pauses a borrower's payments while the servicer reviews other information about the borrower's loans. We believe that it is reasonable to assign credit toward forgiveness for periods where the Department pauses payments while reviewing paperwork so that the borrower is not worse off due to any administrative challenges the Department faces. At the same time, the Department hopes that the simpler rules around tracking payments for IDR would reduce the time a borrower spends in one of these mandatory administrative forbearances.

Several non-Federal negotiators also raised concerns that many borrowers may have paused their payments through deferments or forbearances because of misinformation or actions by their servicer.<sup>32</sup> This may include situations where a borrower would have had a \$0 payment on an IDR plan but was placed in a forbearance instead. While the Department is deeply concerned about ensuring that borrowers receive accurate counseling on the best repayment option for them, we believe the best solution to this problem is the process in proposed § 685.209(k)(6) that gives borrowers a chance to gain credit toward forgiveness for any month spent in a deferment or forbearance. This option would not apply to months spent in a deferment or forbearance that the Department is already proposing should be treated as a qualifying month toward forgiveness. The proposed process would give the borrower the opportunity to submit an additional payment or payments for

each month spent in deferment or forbearance at the lesser of what they would have paid on the 10-year standard plan or an IDR plan at that time. A borrower who ended up on a deferment or forbearance when they should have had a \$0 IDR payment would thus be able to receive credit for all those months without making additional payments. If the Department cannot calculate the IDR payment for that period with existing data in its possession, then it would ask the borrower to furnish the information it needs to calculate what the payment on IDR should have been.

Non-Federal negotiators suggested some alternative ideas for addressing concerns around usage of deferments or forbearances, which included counting all periods of forbearance or automatically counting certain periods of forbearance before a certain date. Under those proposals, a borrower would have a strong incentive to request a discretionary forbearance, which does not have the same explicit eligibility standards as many other deferments and forbearances. This would allow many borrowers who could make payments to receive credit toward IDR forgiveness for months, if not years, when they could have been making payments. Instead, we believe the inclusion of the specific deferment and forbearance categories identified in this proposed rule would strike an appropriate balance by removing the downside risk of deferments and forbearances by allowing them to count towards forgiveness, while ensuring that borrowers continue to make payments when they are able.

#### Treatment of Income and Loan Debt (§ 685.209(e))

Some of the non-Federal negotiators argued that repayment should be calculated based solely on the borrower's income and should not consider the income of spouses who did not obtain student loans. Ultimately, they argued, repayment of student loans is the responsibility of the borrower.<sup>33</sup> During the public comment period on December 9, 2021, one participant stated, "Calculating repayment using the nonborrower's income, married filing jointly, dramatically increases the repayment amount beyond the borrower's affordability. It financially penalizes the nonborrowing spouse for being married to the student. It creates an undue financial hardship on the nonborrower and it disincentivizes

some marriages in otherwise already stressed, economic circumstances."<sup>34</sup>

The Department proposes in § 685.209(e)(1) to make the requirements for including or excluding married borrowers' incomes more consistent across all IDR plans, and to avoid the complications that might be created by requesting spousal information when married borrowers have filed their taxes separately, such as in cases of domestic abuse, divorce, or separation. The Department notes, however, that section 455 of the HEA requires that the repayment schedule for an ICR plan be based upon the borrower and the spouse's AGI if they file a joint tax return.

The Department agrees that there are benefits to allowing the treatment of spouses' income of married borrowers in all IDR plans to mirror the PAYE and IBR plans, which include only the borrower's income in the calculation of the monthly payment amount in the case of married borrowers who file separate Federal income tax returns. First, establishing the same procedures and requirements across each of the IDR plans with respect to spouses' income would alleviate any confusion a borrower may have when selecting a plan that meets their needs. Secondly, having different requirements for different plans would create operational difficulty for the Department in the processing of application requests. Finally, excluding spousal income under all IDR plans for borrowers who file separate tax returns would create a process that is more streamlined and simplified when it comes to borrowers enrolling in an IDR plan. For instance, if for all IDR plans married borrowers are required to supply their spouses' incomes only if they file a joint tax return, borrowers would be able to complete their IDR applications more easily, and data-sharing to automate the transfer of income information from tax records would be more straightforward. Accordingly, we propose to change the terms of the REPAYE plan to exclude spousal income for borrowers who are married and filing separately.

#### Forgiveness Timeline (§ 685.209(k))

Forgiveness for borrowers after a set number of monthly payments is another key component of IDR plans. Many of the non-Federal negotiators took issue with the fact that loan forgiveness time periods are very long. They asserted that loan forgiveness should not take 20 to 25 years for all borrowers. In fact, one non-Federal negotiator explained, "I

<sup>32</sup> <https://www2.ed.gov/policy/highered/reg/hearulemaking/2021/nov4pm.pdf>.

<sup>33</sup> <https://www2.ed.gov/policy/highered/reg/hearulemaking/2021/dec9pm.pdf>, p. 104.

<sup>34</sup> <https://www2.ed.gov/policy/highered/reg/hearulemaking/2021/dec9pm.pdf>, p. 104.

would love to see 10 years of forgiveness, or 10 years to forgiveness for those who have limited income because . . . carrying that burden for 20 or 25 years is more than life altering, it's trajectory-altering."<sup>35</sup> A 2016 information experiment showed that the long length of repayment in IDR discourages borrowers from signing up for an IDR plan, especially for students who would benefit the most from lower payments compared to payments under the 10-year standard repayment plan.<sup>36</sup>

The Department is not proposing to change the maximum forgiveness timelines in REPAYE, which provides forgiveness after 20 years for borrowers who only have undergraduate loans and 25 years for all others. The Department recognizes that this means some borrowers with loans for a graduate program could still have the option of choosing a plan that provides forgiveness after 20 years, such as the IBR plan for newer borrowers, which is shorter than what the Department is proposing for REPAYE. However, as discussed elsewhere in this notice of proposed rulemaking, a borrower would not be allowed to switch to the IBR plan after making 120 or more qualifying payments on REPAYE. Moreover, the Department is also proposing to restrict future enrollment in the PAYE and ICR plans only to student borrowers who were enrolled in that plan on the effective date of the regulations and who stay enrolled in that plan. The Department believes that the more generous repayment benefits proposed under this plan would outweigh the tradeoffs of a slightly longer time to forgiveness.

While the Department is not proposing to change the maximum time to forgiveness, it proposes in § 685.209(k)(3) to add a provision that grants forgiveness starting at 10 years for borrowers whose original total Direct Loan principal balance was less than or equal to \$12,000, with the time to forgiveness increasing by 1 year for each additional \$1,000 added to their original principal balance above \$12,000. For example, a borrower whose original principal balance was \$13,000 would receive forgiveness after the equivalent of 11 years of payments, while someone who originally borrowed \$20,000 would receive forgiveness after the equivalent of 18 years of payments. The overall caps of 20 years (for those with only undergraduate loans) or 25 years (for those with graduate loans) would still

apply. The result would be that a borrower with \$22,000 in loans for an undergraduate program or \$27,000 in loans for a graduate program would not benefit from the shortened time to forgiveness. The eligibility for the shortened forgiveness period would be based upon the original principal balance of all of a borrower's loans, such that if they later borrow additional funds their time to forgiveness would adjust to include those new balances. Borrowers in this situation would, however, maintain at least some of the credit toward forgiveness from prior payments.

The Department proposes the \$12,000 threshold for early forgiveness based upon considerations of how much income a borrower would have to make to be able to pay off a loan without benefiting from this shortened repayment period. The Department then tried to relate that amount in terms of the maximum amount of loans an undergraduate borrower could receive so the connection would be easier for a future student to understand when making borrowing decisions. That amount worked out to the maximum amount that a dependent undergraduate student can borrow in their first 2 years of postsecondary education (\$5,500 for a dependent first-year undergraduate and \$6,500 for a dependent second-year undergraduate, for a total of \$12,000).

For the income analysis, we looked at what a one-, two-, and four-person household would have needed to earn in 2020 to pay off a \$12,000 loan at a 5 percent interest rate in 10 years, assuming that all of their debt was for an undergraduate program, they maintained that household size, and their income rose exactly with the Federal poverty guidelines during this period. These calculations show that a borrower in a one-person household would not benefit from the early forgiveness if their starting income exceeded \$59,257. The corresponding income levels for two- and four-person households are \$69,337 and \$89,497. These amounts can be compared to inflation-adjusted estimates of family income for adults early in their careers (aged 25 to 34) who have completed different levels of postsecondary attainment and are not currently enrolled.<sup>37</sup> The Department chose 25 to 34 to better reflect the ages of individuals who are just starting to repay their student loans. These figures are calculated using the 2019 American

Community Survey 5-year sample, inflation-adjusted to 2020 dollars. The overall median for those with at least some college education (including those with less than a bachelor's degree and those with a bachelor's degree or higher) is \$74,740. Within that group the figures are \$58,407 for those with less than a bachelor's degree and \$89,372 for those with a bachelor's degree or higher. The starting income at which an individual would not benefit from early forgiveness is, thus, close to the median family income for a 25- to 34-year-old individual with less than a bachelor's degree, while the figure for a four-person household is close to that of the family income for a young adult with a bachelor's degree or higher. Hence, the benefits of early forgiveness are most likely to be felt by middle- or low-income borrowers.

The Department also compared the starting income at which a borrower would not benefit from a shorter forgiveness period to the 2020 U.S. median household income at different levels of postsecondary attainment. Median U.S. household income across all households in which the highest attainment level is some college (\$63,700) is similar to the income level at which a borrower in a one- or two-person household would not benefit from early forgiveness. The median household income where the highest attainment level is at least a bachelor's degree (\$107,000) is substantially higher than the income level at which a borrower in a four-person household would not benefit from early forgiveness.<sup>38</sup> Thus, the Department believes that the threshold for early forgiveness would be well aligned with the distribution of income for households that have at least some postsecondary education.

The Department believes the \$12,000 amount as a starting point for forgiveness is also an appropriate threshold based upon the income a borrower would have to earn to benefit from this assistance. Having the time to forgiveness increase by 1 year for each \$1,000 borrowed would keep the income at which a borrower would benefit from this provision roughly constant, such that a borrower would not be able to benefit from forgiveness at years 11 through 19 at an income level far different from what a borrower could earn and still receive forgiveness at year 10. It would also ensure there is not a cliff at which borrowers would

<sup>35</sup> <https://www2.ed.gov/policy/highered/reg/hearulemaking/2021/dec7am.pdf>, p. 17.

<sup>36</sup> <https://www.sciencedirect.com/science/article/pii/S0047272719301288>.

<sup>37</sup> Family income differs slightly from household income in that it only captures the incomes of individuals related to the head of the household, while household income includes all individuals regardless of their relation to one another.

<sup>38</sup> <https://www.census.gov/content/dam/Census/library/visualizations/2021/demo/p60-273/figure1.pdf>.



otherwise have to wait another 10 years for forgiveness.

In selecting the starting amount of \$12,000 the Department also considered the lower amount of \$10,000 as well as the higher amount of \$19,000. The former is based upon the 1-year loan limit for an independent undergraduate borrower, rounded up to the nearest \$1,000, while the latter is equal to the 2-year loan limit for an independent undergraduate borrower. The Department did not select the higher amount because that level of debt would not achieve the policy goal of targeting the early forgiveness benefit on borrowers who were most likely to struggle to repay their loans. While there are borrowers with debt levels that high who may struggle to repay, the degree of default and delinquency is not as high as it is for those with lower loan amounts. For instance, 63 percent of borrowers in default had an original loan balance of \$12,000 or less, while just 15 percent of borrowers in default originally borrowed between \$12,000 and \$19,000.<sup>39</sup> The Department also was concerned that starting with a higher original loan balance threshold for 10-year forgiveness and increasing the time to forgiveness by 12 monthly payments for each additional \$1,000 would also mean that the benefits to borrowers receiving forgiveness in a period longer than 10 years but shorter than 20 or 25 years would be less well targeted. For instance, for a borrower in a one-person household, raising the amount eligible for early forgiveness from \$12,000 to \$19,000 would increase the amount the borrower would need to earn to not receive early forgiveness from \$59,300 to approximately \$77,000. The Department also decided against proposing to start the shorter forgiveness period at original principal balances of \$10,000 because the incomes where a borrower would stop benefiting from this option are too far below the national median income for households with at least some college. For example, the threshold for a one-person household would be \$54,166, even further below the two different measures of median income discussed above.

We also considered multiple options for how the time to forgiveness should change with the level of additional debt. We only considered adjusting the time to forgiveness in one-year increments. We are concerned that lesser increments (such as one month, three months, or six

months) would be confusing to explain to borrowers and create a very wide range of repayment timeframes, making the policy harder to implement. We looked at the starting income at which borrowers would cease benefiting from the shortened repayment timeframe for different dollar increments per additional year of payments. We modeled this for undergraduate-only borrowers because we anticipate that they are the most likely to have debt balances eligible for the shortened time to forgiveness. The dollar increments we considered per additional year of required payments were \$500, \$1,000, \$1,500, and \$2,000, as these round dollar amounts would be easier to communicate to borrowers. Increments of \$500 produced the counterintuitive effect of the maximum starting income for a borrower to benefit from the 10-year forgiveness on a \$12,000 original balance exceeding the maximum starting income for a borrower who owed any of the higher amounts that would still be eligible for the shortened forgiveness timeframe (e.g., \$12,500 over 11 years, \$13,000 at 12 years, etc.). By contrast, the difference in starting incomes that would benefit from the shortened time to forgiveness would be too large when using an increment of an extra year for every \$1,500 or \$2,000. In those situations, increasing the time to forgiveness by a year per additional \$1,500 in a borrower's loan balance would result in a situation where a borrower who receives forgiveness after 19 years with a loan balance of \$25,500 would be able to make approximately \$11,000 more in starting income than a borrower with a loan balance of \$12,000 and receives forgiveness after 10 years. The gap in break-even starting income for lower- and higher-balance borrowers when using a \$2,000 increment is even larger, at more than \$18,000. By contrast, the gap using \$1,000 increments is less than \$4,000. Selecting a slope in which every additional \$1,000 adds 1 year of payments thus ensures relatively consistent break-even starting income thresholds for all borrowers who would benefit from the shortened time to forgiveness.

The Department also recognizes that proposing to tie the starting point for the shortened repayment period to a set dollar amount linked to statutory loan limits means that any potential future changes to Federal loan limits could result in a situation where the shortened forgiveness period no longer matches what a dependent borrower could take out in 2 years of a program. Accordingly, the Department seeks comments as to whether it should

define the starting point for the shortened forgiveness to the first two years of loan limits for a dependent undergraduate to allow for an automatic adjustment. Similarly, we seek comments on whether we should consider a slope for early forgiveness tied to a specific dollar amount or one that adjusts for inflation.

The Department proposes starting the forgiveness period at 10 years to align with the standard repayment plan. This would ensure that lower-balance borrowers would not be worse off for having chosen IDR. Using the same repayment time frames would also make it easier for borrowers to choose among plans, which reduces complexity for them in navigating the repayment system.

We believe it is reasonable to require borrowers who borrow smaller amounts to repay for shorter periods of time than borrowers who borrow larger amounts. This could encourage borrowers to be more sensitive to the amount they borrow, which could reduce the chances that they borrow more than they need. Conversely, it may encourage debt-averse borrowers to be willing to borrow small amounts, which could help these students persist and ultimately complete a credential.<sup>40</sup>

The Department is concerned that even though IDR plans have done a great deal to help avert delinquency and default for the borrowers who use them, levels of delinquency and default among the total population of borrowers still remain unacceptably high. For instance, prior to the COVID-19 national emergency and the pause on student loan interest, repayment, and collections, there were more than 1 million Direct Loan borrowers defaulting every year.<sup>41</sup> Similarly, in the quarters prior to the student loan repayment pause there were 1.9 million borrowers whose loans were managed by the Department who were 90 or more days late on their loans.<sup>42</sup> The Department believes that the early forgiveness option is one of several key changes that would help encourage more low-balance borrowers to use IDR and to avoid delinquency and default. A large majority of borrowers who defaulted on their loans took out small loans, at least initially. Based upon an analysis of borrower balances as of

<sup>39</sup> <https://www.aeaweb.org/articles?id=10.1257/pol.20180279>.

<sup>41</sup> Department analysis of data from the FSA Data Center, available at <https://studentaid.gov/sites/default/files/DLEnteringDefaults.xls>.

<sup>42</sup> Department analysis of data from the FSA Data Center, available at <https://studentaid.gov/sites/default/files/fsawg/datacenter/library/DLPortfoliobyDelinquencyStatus.xls>.

<sup>39</sup> Department analysis of data from the Office of Federal Student Aid, FSA Data Center, Portfolio by Debt Size and IDR Portfolio by Debt Size, May 2022, <https://studentaid.gov/data-center/student/portfolio>.

December 2019, only 17 percent of borrowers in repayment who originally borrowed \$12,000 or less were using IDR, compared to 52 percent of those who originally borrowed over \$50,000.<sup>43</sup> By contrast, 63 percent of the borrowers in default had an original loan balance of \$12,000 or less.<sup>44</sup> A shorter period to forgiveness would make this IDR plan more attractive for the most vulnerable borrowers and help them avoid defaulting on their loans.

Importantly, the Department proposes to base early forgiveness on what the borrower originally borrowed. The Department is concerned that many borrowers who originally had lower balances owe more today than what they originally borrowed due to accumulating interest, interest capitalization, and prior defaults. For instance, among borrowers who first entered college in the 2003–04 academic year, more than one-third (37 percent) had a higher balance in 2015 than what they originally borrowed.<sup>45</sup> Of those who owed more than they originally borrowed, the median borrower owed 119 percent of their original balance.<sup>46</sup> Connecting repayment to the amount originally borrowed would also ensure that future borrowers will be able to understand when they first borrow a loan what the implications are for their future repayment time frame. This early forgiveness provision would align with suggestions made by several non-Federal negotiators to shorten the forgiveness period but do so in a targeted manner that would provide benefits to those who are most likely to struggle to repay. Adding these benefits solely to the REPAYE plan would move in the direction of having one IDR plan that is the most beneficial for almost all borrowers, thereby simplifying loan counseling and servicing and making it easier for borrowers to understand which plan is best for them.

#### Automatic Enrollment in an IDR Plan (§ 685.209(m))

The Department proposes in § 685.209(m) to allow the Secretary to automatically enroll a borrower into the IDR plan that produces the lowest monthly payment for which the

borrower is eligible if the borrower is 75 days or more past due on their loan payments. This would occur if the borrower has provided approval for the IRS to share their tax information with the Secretary, and if the Secretary determines that the borrower's payment would be lowered by enrolling in an IDR plan. This auto-enrollment provision would build on the Secretary's authority in section 455 of the HEA to place a borrower who is in default on an ICR plan.

The Department is proposing this change because far too often borrowers end up in default on a student loan when they would have had a low or even a \$0 payment on an IDR plan. The Department is concerned that these borrowers may not be aware of IDR plans, and automatically moving them on to one of the plans and presenting them with the likely lower payment would be a better way to raise awareness than additional marketing or outreach. Moreover, the fact that borrowers have gone delinquent on their payments suggests that payments on their current repayment plans may be unaffordable. Automatically enrolling these borrowers in an IDR plan would ensure that no borrower whom the Department can identify as having a \$0 payment would end up in default.

The Department proposes 75 days as the point for auto-enrollment to avoid the negative credit reporting that first occurs on Federal student loans when they are 90 days late. Negative credit reporting is a significant step on the road to default and can cause broader harm for the borrower. For instance, once a borrower's credit score drops, it may be harder for that individual to obtain housing or acquire different types of financial services. By implementing the 75-day rule to place delinquent borrowers in an IDR plan, the Department would be able to ensure more borrowers can avert default and help prevent those borrowers from receiving a negative credit history report.

#### Defaulted Loans (§ 685.209(d) and (k))

The Department also proposes several additional changes that would help borrowers in default benefit from IDR. Several non-Federal negotiators agreed with the Department's proposal to allow a borrower in default to enter an IDR plan that allows them to make progress toward forgiveness.<sup>47</sup>

The Department proposes in § 685.209(d)(2) to allow defaulted borrowers to enroll in IBR so that they

may receive credit toward forgiveness. These borrowers would receive credit toward forgiveness both for payments made through the IBR plan and any amounts collected through administrative wage garnishment, the Treasury Offset Program, or any other means of forced collection that are equivalent to what the borrower would have owed on the 10-year standard plan.

The Department proposes to grant borrowers access to IBR as permitted by section 493C of the HEA. While section 455 of the HEA provides that the Secretary may enroll a borrower in default in an ICR plan, that section also provides that periods while the borrower is in default do not count toward the maximum repayment time frame on an ICR plan. The Department believes borrowers in default would be better served by using an IDR plan in which they would be able to accumulate progress toward forgiveness.

The Department proposes to make defaulted borrowers eligible for IBR because the Department believes that those who have defaulted on a loan should still have access to more affordable payments and a path to forgiveness. Moreover, given the limited number of pathways and opportunities for getting out of default, this change would ensure that, even if a borrower is unable to rehabilitate or consolidate their loans, they would still have a way to establish more manageable payments.

The Department also recognizes that many borrowers in default may not make voluntary payments but could be subject to forced collections activity. Since amounts collected through tools such as administrative wage garnishment or the Treasury Offset Program are credited toward a borrower's balance, the Department proposes in § 685.209(k)(5) that borrowers also receive credit toward IBR forgiveness for amounts collected through these means that are equal to what a borrower would have paid on the 10-year standard plan. In other words, if a borrower has a \$600 tax refund credited against their loan debt through the Treasury Offset Program and their monthly payment on the 10-year standard plan would have been \$50, then they would receive a year's worth of credit toward IBR forgiveness.

The Department recognizes that allowing borrowers in default access to IBR provides them a path to forgiveness and also results in a higher payment amount than the borrower would owe under REPAYE. Therefore, the Department seeks comments on how to address the tradeoffs between lower monthly payments versus credit toward forgiveness for borrowers in default,

<sup>43</sup> Department of Education analysis of data for the defaulted borrower population, conducted in FSA's Enterprise Data Warehouse, with data as of December 31, 2019.

<sup>44</sup> Ibid.

<sup>45</sup> Department analysis of data from the Beginning Postsecondary Students Longitudinal Study, 2003–04 using the Powerstats web tool at <https://nces.ed.gov/datalab/>. Table ID: iyaord.

<sup>46</sup> Department analysis of data from the Beginning Postsecondary Students Longitudinal Study, 2003–04 using the Powerstats web tool at <https://nces.ed.gov/datalab/>. Table ID: kxmelz.

<sup>47</sup> <https://www2.ed.gov/policy/highered/reg/hearulemaking/2021/dec9pm.pdf>.

recognizing that the HEA explicitly states that time in default cannot count toward forgiveness under plans such as REPAYE that are created under the ICR authority.

#### Application and Annual Recertification Procedures (§ 685.209(l))

As a result of changes made by Congress in 2019 that allow borrowers to grant multiyear approval for the sharing of their tax information to the Department, we propose to provide borrowers with an easier path to participating in IDR as well as to annually recertifying their income to recalculate their payments. Currently, borrowers who wish to participate in an IDR plan must complete an application and furnish their income information either through an online tool that allows them to transfer their data from the IRS or by providing an alternative form of income documentation, such as pay stubs. Borrowers also have to provide information on their family size. Borrowers must then recertify their income and family size annually through the same processes. The purpose of this recertification is to have the borrower self-certify their family size, as well as provide documentation that shows their annual AGI so that payments are based on more up-to-date financial and familial circumstances.

The application and recertification processes create significant challenges for the Department and borrowers. A borrower must be aware of and complete paperwork for IDR to be told exactly what their payment would be, since online estimator tools cannot guarantee what a borrower would pay. The borrower must also repeat these steps every year, requiring the Department to send a recertification reminder to the borrower. The borrower has a limited period of time to return the annual certification back to the Department's loan servicer. Failure to meet the deadline can result in the borrower losing eligibility to continue in their repayment plan and, under current regulations, having their interest capitalized. Department data from 2019 show that 39 percent of borrowers on an IDR plan recertified on time and that only 57 percent had certified within 6 months after their recertification deadline.<sup>48</sup>

Due to the concern that the process is confusing for borrowers, challenging for the Department to administer, and prone to potential errors that could cause a borrower's removal from IDR

plans, the Department proposes to simplify the IDR application and annual recertification process. Due to recent statutory changes regarding disclosure of tax information, when the Department has the borrower's approval, it will rely on tax data to provide a borrower with a monthly payment amount and offer the borrower an opportunity to request a different payment amount if it is not reflective of the borrower's current income or family size.<sup>49</sup>

#### Consequences of Failing To Recertify (§ 685.209(l))

Current regulations specify that a borrower who fails to recertify their income and family size for the REPAYE plan is placed in an alternative plan in which the borrower's monthly payment is the amount to either repay the loan within 10 years of starting on the alternative repayment plan or within 20 or 25 years of starting on the REPAYE plan.

The Department is concerned that the structure of the alternative repayment plan provision is overly complicated and creates confusion for borrowers as well as operational challenges. Accordingly, the Department proposes to simplify this alternative repayment plan provision. Borrowers who fail to recertify would initially be placed on an alternative payment plan with payments set to the amount the borrower would have paid on a 10-year standard repayment plan based on the current loan balances and interest rates on the loans at the time the borrower was removed from the REPAYE plan, except that no more than 12 of these payments could count toward forgiveness. If the borrower wanted to change their repayment amount, the borrower could then submit evidence of exceptional circumstances to support changing the amount of the required payment under the alternative payment plan or change to a different repayment plan. Simplifying the terms of the alternative plan would assist in reducing complexity for borrowers.

#### Consolidation Loans (§ 685.209(k))

In response to concerns raised by non-Federal negotiators, the Department proposes in § 685.209(k)(4)(v) to provide that payments made on loans prior to consolidation would count toward IDR forgiveness without restarting the clock toward forgiveness. More specifically, the Department proposes to allow a borrower who consolidates one or more Direct Loan or FFEL program loans into

a Direct Consolidation Loan to count the qualifying payments the borrower made on the Direct Loan or FFEL program loans prior to consolidating as qualifying payments on the Direct Consolidation Loan.

The Department would effectuate this change by giving borrowers credit toward forgiveness by calculating the weighted average of qualifying payments made on the original principal balance of all loans repaid by the consolidation loan. For example, if a borrower has made 30 qualifying payments on loans with an original principal balance of \$30,000 and consolidates them with a loan that includes another \$30,000 of loans that have never had any qualifying payments, then the borrower's consolidation loan would be credited with 15 payments toward forgiveness.

The Department believes that the current regulations too often force borrowers to choose between receiving more affordable loan payments and losing out on progress toward forgiveness. For example, consolidation is one of two pathways for borrowers to exit default and re-enter repayment. While consolidation is typically the fastest route out of default, borrowers who choose that option lose out on any progress they made toward forgiveness prior to defaulting. Beyond these specific circumstances, the Department is concerned more generally that borrowers often do not understand the effect of consolidation on their forgiveness progress and making this change would contribute to the Department's goal of removing complications to loan repayment, which can generate borrower frustration.

#### Conclusion

Under the proposed regulations, student borrowers seeking an IDR plan would generally choose between the IBR plan under section 493C of the HEA and the REPAYE plan, as modified by these proposed regulations. (Borrowers with Direct Consolidation Loans that include a Parent PLUS loan would still have access to the ICR plan.) This would significantly simplify the landscape of available IDR plans that borrowers seeking to enter an IDR plan currently navigate.

Borrowers who are currently enrolled in the ICR or PAYE plans could remain in those plans. However, should they seek to change plans, they would no longer have access to the original ICR plan and the PAYE plan and instead would choose from, with respect to IDR plans, the REPAYE plan or the IBR plan. The Department believes that most student borrowers who are currently on

<sup>48</sup> Department of Education internal analysis of data for IDR borrowers who had a recertification date during the 2018 calendar year.

<sup>49</sup> <https://www.congress.gov/bill/116th-congress/house-bill/5363/text/pl>.

the original ICR or the PAYE plan would see significant payment reductions by switching to the REPAYE plan, as modified by these proposed regulations. The Department believes that borrowers would benefit from a more affordable plan that provides more protected income for borrowers to meet their family's basic needs.

The plan would also reduce the share of discretionary income that goes toward loan payments for borrowers with undergraduate debt, stop loan balances from growing due to unpaid interest, and reduce the amount of time for which borrowers with lower loan balances need to repay.

#### *Executive Orders 12866 and 13563*

##### *Regulatory Impact Analysis*

Under Executive Order 12866, the Office of Management and Budget (OMB) must determine whether this regulatory action is "significant" and, therefore, subject to the requirements of the Executive Order and subject to review by OMB. Section 3(f) of Executive Order 12866 defines a "significant regulatory action" as an action likely to result in a rule that may—

(1) Have an annual effect on the economy of \$100 million or more, or adversely affect a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities in a material way (also referred to as an "economically significant" rule);

(2) Create serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impacts of entitlement grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles stated in the Executive Order.

The Department estimates the net budget impact to be \$137.9 billion in increased transfers among borrowers, institutions, and the Federal Government, with annualized transfers of \$14.8 billion at 3 percent discounting and \$16.3 billion at 7 percent discounting, and annual quantified costs of \$1.1 million related to administrative costs. Therefore, this proposed action is "economically significant" and subject to review by OMB under section 3(f) of Executive Order 12866. Notwithstanding this determination, based on our assessment of the potential costs and benefits (quantitative and qualitative), we have

determined that the benefits of this proposed regulatory action would justify the costs.

We have also reviewed these regulations under Executive Order 13563, which supplements and explicitly reaffirms the principles, structures, and definitions governing regulatory review established in Executive Order 12866. To the extent permitted by law, Executive Order 13563 requires that an agency—

(1) Propose or adopt regulations only on a reasoned determination that their benefits justify their costs (recognizing that some benefits and costs are difficult to quantify);

(2) Tailor its regulations to impose the least burden on society, consistent with obtaining regulatory objectives and taking into account—among other things and to the extent practicable—the costs of cumulative regulations;

(3) In choosing among alternative regulatory approaches, select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity);

(4) To the extent feasible, specify performance objectives, rather than the behavior or manner of compliance a regulated entity must adopt; and

(5) Identify and assess available alternatives to direct regulation, including economic incentives—such as user fees or marketable permits—to encourage the desired behavior, or provide information that enables the public to make choices.

Executive Order 13563 also requires an agency "to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible." The Office of Information and Regulatory Affairs of OMB has emphasized that these techniques may include "identifying changing future compliance costs that might result from technological innovation or anticipated behavioral changes."

We are issuing these proposed regulations only on a reasoned determination that their benefits would justify their costs. In choosing among alternative regulatory approaches, we selected those approaches that maximize net benefits. Based on the analysis that follows, the Department believes that these regulations are consistent with the principles in Executive Order 13563.

We have also determined that this regulatory action would not unduly interfere with State, local, and Tribal governments in the exercise of their governmental functions.

As required by OMB Circular A–4, we compare the proposed regulations to the current regulations. In this regulatory impact analysis, we discuss the need for regulatory action, potential costs and benefits, net budget impacts, and the regulatory alternatives we considered.

#### *Need for Regulatory Action*

The Department has identified a significant need for regulatory action to promote access to more affordable repayment plans for student loan borrowers.

IDR plans are created either through regulation or statute and base a borrower's monthly payment on their income and family size. Under these plans, loan forgiveness occurs after a set number of payments, depending on the repayment plan that is selected. Because payments are based on a borrower's income, they may be more affordable than other fixed repayment options, such as those in which a borrower makes payments over a period of between 10 and 30 years. There are four repayment plans that are collectively referred to as IDR plans: (1) the IBR plan; (2) the ICR plan; (3) the PAYE plan; and (4) the REPAYE plan. Within the IBR plan, there are two versions that are available to the borrower, depending on when they took out their loans. Specifically, for a new borrower with loans taken out on or after July 1, 2014, the borrower's payments are capped at 10 percent of discretionary income. For those who are not new borrowers on or after July 1, 2014, the borrower's payments are capped at 15 percent of their discretionary income. IDR plans simultaneously provide protection for the borrower against the consequences of ending up as a low earner and adjust repayments to fit the borrower's changing ability to pay.<sup>50</sup> Because of these benefits, Federal student loan borrowers are increasingly choosing to repay their loans using one of the IDR plans.<sup>51</sup> Enrollment in IDR plans increased by about 50 percent between the end of 2016 and the start of 2022, from approximately 6 million to more than 9 million borrowers and more than \$500 billion in debt is currently being repaid through the IDR repayment plans.<sup>52</sup> Similarly, the share of

<sup>50</sup> Krueger, A.B., & Bowen, W.G. (1993). Policy Watch: Income-Contingent College Loans. *Journal of Economic Perspectives*, 7(3), 193–201. <https://doi.org/10.1257/jep.7.3.193>.

<sup>51</sup> Gary-Bobo, R.J., & Trannoy, A. (2015). Optimal student loans and graduate tax under moral hazard and adverse selection. *The RAND Journal of Economics*, 46(3), 546–576. <https://doi.org/10.1111/1756-2171.12097>.

<sup>52</sup> U.S. Dep't of Educ., Federal Student Aid Data Center, Repayment Plans, available <https://studentaid.gov/manage-loans/repayment/plans>.

borrowers with Federally managed loans enrolled in an IDR plan rose from just over one-quarter to one-third during this time.<sup>53</sup>

Section 455(d)(1)(D) of the HEA, as discussed elsewhere in this document, requires the Secretary to offer an income-contingent repayment plan with terms prescribed by the Secretary. The Department proposes to amend the regulations governing income-contingent repayment plans by amending the REPAYE repayment plan, as well as restructuring and renaming the repayment plans available in the Direct Loan Program, including by combining the ICR and the IBR plans under the umbrella terms of the “IDR plans.”

The Department has identified several areas that need improvement related to IDR plans. First, many struggling borrowers are not enrolled in IDR plans that would improve their chances of avoiding delinquency and default. Research shows that low-income borrowers and borrowers with high debt levels relative to their incomes enroll in IDR plans at lower rates.<sup>54</sup> An analysis of IDR usage by the JPMorgan Chase Institute found that there are two borrowers who could potentially benefit from an IDR plan for each borrower who is using those plans.<sup>55</sup> Moreover, the borrowers not using the IDR plans appear to have significantly lower incomes than those who are enrolled. An Urban Institute analysis using the 2016 Survey of Consumer Finances found that the share of Black borrowers using IDR was lower than the share of borrowers not making any payments.<sup>56</sup> The gap between IDR usage and not making any payments was even larger for borrowers who were receiving Federal benefits, such as support from the Supplemental Nutrition Assistance Program.<sup>57</sup> According to a 2012 U.S. Treasury study, 70 percent of defaulted

Includes all Federally managed loans across all IDR plans, measured in Q4 2016 through Q1 2022.

<sup>53</sup> Ibid.

<sup>54</sup> Daniel Collier et al., *Exploring the Relationship of Enrollment in IDR to Borrower Demographics and Financial Outcomes* (Dec. 30, 2020); see also Seth Frotman and Christa Gibbs, *Too many student loan borrowers struggling, not enough benefiting from affordable repayment options*, *Consumer Fin. Prot. Bureau* (Aug. 16, 2017).

<sup>55</sup> This analysis is restricted to borrowers with a Chase checking account who meet certain other criteria in terms of frequency of monthly transactions and amount of money deposited into the account each year. <https://www.jpmorganchase.com/institute/research/household-debt/student-loan-income-driven-repayment>.

<sup>56</sup> <https://www.urban.org/urban-wire/demographics-income-driven-student-loan-repayment>.

<sup>57</sup> Ibid.

borrowers have incomes that would have allowed them to reduce their payments compared to the standard 10-year repayment plan by going onto IDR; these payment reductions could have reduced the likelihood of default.<sup>58</sup> Though IDR enrollment has increased since 2012, in 2019 alone, more than 1.2 million Federal student loan borrowers defaulted on their Direct Loans, and more were behind on their payments and at risk of defaulting.<sup>59</sup>

While IDR options have helped to make loans more affordable for many, borrowers often still face challenges with IDR plans. Most borrowers enrolled in IDR plans experience increased loan balance growth when their payments are not large enough to cover the interest they accrue.<sup>60</sup> Focus groups of borrowers also show that this possibility may also serve as a source of stress even for borrowers who do enroll in IDR plans and who are able to afford their payments.<sup>61</sup> Additionally, some borrowers encounter barriers to accessing and maintaining affordable payments on IDR plans. One barrier, in particular, for some borrowers is in recertifying their incomes by the annual deadline due to the burden of the recertification process for the borrower, which may be one reason that some borrowers choose instead to enter deferment or forbearance, or fall out of or leave IDR plans.<sup>62</sup> The Consumer Financial Protection Bureau found that delinquency rates significantly worsened for those who did not recertify their incomes on time after their first year in an IDR plan.<sup>63</sup> In contrast, delinquency rates for those

<sup>58</sup> U.S. Government Accountability Office, 2015. *Federal Student Loans: Education Could Do More to Help Ensure Borrowers are Aware of Repayment and Forgiveness Options*. GAO-15-663. U.S. Government Accountability Office, 2016. *Education Needs to Improve its Income Driven Repayment Plan Budget Estimates*. Technical Report GAO-17-22.

<sup>59</sup> U.S. Government Accountability Office, 2015. *Federal Student Loans: Education Could Do More to Help Ensure Borrowers are Aware of Repayment and Forgiveness Options*. GAO-15-663. U.S. Government Accountability Office, 2016. *Education Needs to Improve its Income Driven Repayment Plan Budget Estimates*. Technical Report GAO-17-22.

<sup>60</sup> Department of Education analysis of loan data for borrowers enrolled in IDR plans, conducted in FSA's Enterprise Data Warehouse, with data as of March 2020.

<sup>61</sup> Sattelmeyer, Sarah, Brian Denten, Spencer Orenstein, Jon Remedios, Rich Williams, *Borrowers Discuss the Challenges of Student Loan Repayment* (May 2020), [https://www.pewtrusts.org/-/media/assets/2020/05/studentloan\\_focusgroup\\_report.pdf](https://www.pewtrusts.org/-/media/assets/2020/05/studentloan_focusgroup_report.pdf).

<sup>62</sup> Consumer Financial Protection Bureau. *Borrower Experiences on Income-Driven Repayment*. November 2019. [https://files.consumerfinance.gov/f/documents/cfpb\\_data-point\\_borrower-experiences-on-IDR.pdf](https://files.consumerfinance.gov/f/documents/cfpb_data-point_borrower-experiences-on-IDR.pdf).

<sup>63</sup> Ibid.

who did recertify their incomes slowly improved.

The Department is concerned that the current IDR plans may not adequately serve borrowers and proposes the changes described in this NPRM to improve access to effective and affordable loan repayment plans. In particular, the Department proposes to amend the REPAYE plan to reduce the required monthly payment amount to 5 percent of the borrower's discretionary income for the share of a borrower's total original principal loan volume attributable to loans received as a student in an undergraduate program, increase the amount of discretionary income exempted from the calculation of payment to 225 percent of the Federal poverty guidelines, not charge any remaining monthly interest after applying a borrower's monthly payment, reduce the time to forgiveness under the plan for borrowers with lower original loan balances, and automate the application and recertification process wherever possible, including automatically enrolling delinquent borrowers. Additionally, the Department proposes to modify the IBR plan in § 685.209 to clarify that borrowers in default are eligible to make payments under the plan. The Department also proposes to modify all the regulations for all of the income-driven repayment plans in § 685.209 to allow certain periods of deferment and forbearance to count toward forgiveness, including cancer treatment deferments, unemployment and economic hardship deferments (including Peace Corps service deferments), military service deferments, and administrative forbearances. The Department also proposes to stop resetting progress toward IDR loan forgiveness when a borrower consolidates their loans after making payments that qualify for forgiveness under an IDR plan.

We also propose to modify all the regulations governing the income-driven repayment plans in § 685.209 to automatically enroll any borrowers who are at least 75 days delinquent on their loan payments, and who have previously provided approval for the IRS to share tax information on their incomes and family sizes with the Department, in the IDR plan that is most affordable for them in monthly payments, unless the borrower's current plan provides a lower monthly payment.

Finally, the Department proposes to simplify the complex rules relating to the different IDR plans to the extent allowable by making the REPAYE plan the best choice for most borrowers and by limiting student borrowers already

enrolled in one of the existing ICR plans other than REPAYE from re-enrolling in that plan after they leave it. This will result in phasing out the older repayment plans for student borrowers and will ensure that borrowers have access to the most generous IDR plan.

SUMMARY OF PROPOSED PROVISIONS

Provision	Regulatory section	Description of proposed provision
Streamline the regulations .....	§ 685.208 .....	Would house all fixed amortization repayment plans under this section.
Streamline the regulations .....	§ 685.209 .....	Would house all IDR plans under this section and establish new terms for the REPAYE plan.
Reduce monthly payment amounts, expand interest benefit for borrowers, and shorten the time to forgiveness.	§ 685.209 .....	Would reduce monthly payment amounts to 5 percent of discretionary income for the share of a borrower's total original principal loan volume attributable to loans received as students for an undergraduate program (with a weighted average between 5 and 10 percent for borrowers with outstanding undergraduate and graduate loans, and a payment of 10 percent for borrowers with only outstanding graduate loans), increase the amount of discretionary income exempted from the calculation of payments to 225 percent of the Federal poverty guidelines, not charge any unpaid monthly interest after applying a borrower's payment, and reduce the time to forgiveness under the plan for borrowers with lower original balances.
Address defaulted borrowers ...	§ 685.209 .....	Would clarify that borrowers in default are eligible to make payments under the IBR plan.
Address qualifying payments ...	§ 685.209 .....	Would allow certain periods of deferment and forbearance to count toward IDR forgiveness.
Address qualifying payments ...	§ 685.209 .....	Would allow borrowers an opportunity to make catch-up payments for all other periods in deferment or forbearance.
Address qualifying payments ...	§ 685.209 .....	Would clarify that a borrower's progress toward forgiveness does not fully reset when a borrower consolidates loans on which a borrower had previously made qualifying payments.
Address delinquent borrowers	§ 685.209 .....	Would modify all IDR plans to automatically enroll any borrowers who are at least 75 days delinquent on their loan payments and who have previously provided approval for the IRS to share their tax information with the Secretary in the IDR plan that is best for them.
Limiting new enrollments in older IDR plans.	§ 685.209 .....	Would limit new enrollments in PAYE after the effective date of these regulations, limit enrollments in IBR to borrowers who have a partial financial hardship and have not made 120 payments on REPAYE and would limit new enrollments in the ICR plan after the effective date of the regulations to borrowers whose loans include a Direct Consolidation loan that included a parent PLUS loan.
Consequences of not recertifying on REPAYE.	§ 685.209 .....	Place borrowers who do not recertify on REPAYE into an alternative payment plan where monthly payments are equal to the amount a borrower would pay each month to repay their original balance in equal installments over 10 years and allow no more than 12 of these payments to count toward forgiveness.
Technical changes .....	§§ 685.210, 685.211, and 685.221.	Would establish conforming changes based on revisions to the sections noted above.

Pursuant to the Congressional Review Act (5 U.S.C. 801 *et seq.*), the Office of Information and Regulatory Affairs designated this rule as a "major rule," as defined by 5 U.S.C. 804(2).

Discussion of Costs and Benefits

The proposed regulations would expand access to affordable monthly payments on the REPAYE plan by increasing the amount of income exempted from the calculation of payments from 150 percent of the Federal poverty guidelines to 225 percent of the Federal poverty guidelines, lowering the share of discretionary income put toward monthly payments to 5 percent for a borrower's total original loan principal volume attributable to loans received as students for an undergraduate program, not charging any monthly unpaid interest remaining after applying a

borrower's payment, and providing for a shorter repayment period and earlier forgiveness for borrowers with smaller original principal balances (starting at 10 years for borrowers with original principal balances of \$12,000 or less, and increasing by 1 year for each additional \$1,000 up to 20 or 25 years).

To better understand the impact of these proposed rules, the Department simulated how future cohorts of borrowers would benefit from enrolling in REPAYE under the proposed provisions. To do so, the Department used data from the College Scorecard and Integrated Postsecondary Education Data System (IPEDS) to create a synthetic cohort of borrowers that is representative of borrowers who entered repayment in 2017 in terms of institution attended, education attainment, race/ethnicity, and gender. Using Census data, the Department

projected earnings and employment, marriage, spousal debt, spousal earnings, and childbearing for each borrower up to age 60. Using these projections, payments under a given loan repayment plan can be calculated for the full length of time between repayment entry and full repayment or forgiveness. To provide an estimate of how much borrowers in a given group (*e.g.*, lifetime income, education level) would benefit from enrolling in REPAYE under the proposed provisions, total payments per \$10,000 of debt at repayment entry were calculated for each borrower in the group and compared to total payments that the borrower would make if they were to enroll in the standard 10-year repayment plan and current REPAYE plan. Payments made after repayment entry are discounted using the Office of Management and Budget's Present

Value Factors for Official Yield Curve (Budget 2023) so that the resulting amounts are all provided in present discounted terms.

These projections do not take into account borrowers' decisions of which plan to choose and, thus, should not be interpreted as reflecting estimates of the budgetary costs of the proposed changes to REPAYE. Rather, these estimates reflect changes in simulated payments that would occur if all borrowers enrolled and paid their full monthly obligation in different plans to highlight the types of borrowers who could benefit most under different repayment

plans. They also do not account for the possibility of borrowers being delinquent or defaulting, which could affect assumptions of amounts repaid.

On average, if all borrowers in future cohorts were to enroll in the 10-year standard repayment plan or the current REPAYE plan and make all of their required payments on time, we estimate that borrowers would repay approximately \$11,800 per \$10,000 of debt at repayment entry in both the standard 10-year plan and under the current provisions of REPAYE. The proposed changes to REPAYE would result in the amount repaid per \$10,000

of debt at repayment entry falling to approximately \$7,000. On average, borrowers with only undergraduate debt are projected to see expected payments per \$10,000 borrowed drop from \$11,844 under the standard 10-year plan and \$10,956 under the current REPAYE plan to \$6,121 under the proposed REPAYE plan. The average borrower with graduate debt, whose incomes and debt levels tend to be higher, is projected to have much smaller reductions in payments per \$10,000 borrowed, from \$11,995 under the 10-year standard plan and \$12,506 under the current REPAYE plan to \$11,645.

TABLE 2—PROJECTED PRESENT DISCOUNTED VALUE OF TOTAL PAYMENTS PER \$10,000 BORROWED FOR FUTURE REPAYMENT COHORTS, ASSUMING FULL TAKE-UP OF VARIOUS REPAYMENT PLANS

	All borrowers	Borrowers with only undergraduate debt	Borrowers with any graduate debt
Standard 10-year plan .....	\$11,880	\$11,844	\$11,995
Current REPAYE .....	11,844	10,956	12,506
Proposed REPAYE .....	7,069	6,121	11,645

The Department has also estimated how payments per \$10,000 borrowed would change for borrowers in future repayment cohorts who are projected to have different levels of lifetime individual earnings. For this estimate borrowers are divided into quintiles based on projected earnings from repayment entry until age 60. Borrowers in the first quintile are projected to have lower lifetime earnings than at least 80 percent of all borrowers in the cohort, while those in the top quintile are projected to have higher earnings than at least 80 percent of all borrowers.

On average, borrowers in every quintile of the lifetime income distribution are projected to repay less (in present discounted terms) in the proposed REPAYE plan than in the existing REPAYE plan. However, differences in projected payments per \$10,000 borrowed are largest for borrowers with only undergraduate debt in the bottom two quintiles (*i.e.*, those with projected lifetime earnings less than at least 60 percent of all borrowers in the cohort). Borrowers with only undergraduate debt who have lifetime income in the bottom quintile are

projected to repay \$873 per \$10,000 in the proposed REPAYE plan compared to \$8,724 per \$10,000 in the current REPAYE plan, and borrowers in the second quintile of lifetime income with only undergraduate debt are projected to repay \$4,129 per \$10,000 compared to \$11,813 per \$10,000 in the current REPAYE plan. Borrowers in the top 40 percent of the lifetime income distribution (quintiles 4 and 5) are projected to see only small reductions in payments per \$10,000 borrowed.

TABLE 3—PROJECTED PRESENT DISCOUNTED VALUE OF TOTAL PAYMENTS PER \$10,000 BORROWED FOR FUTURE REPAYMENT COHORTS BY QUINTILE OF LIFETIME INCOME, ASSUMING FULL TAKE-UP OF SPECIFIED PLAN

	Quintile of lifetime income				
	1	2	3	4	5
<b>Borrowers with only undergraduate debt</b>					
Current REPAYE .....	\$8,724	\$11,813	\$11,799	\$11,654	\$11,411
Proposed REPAYE .....	873	4,129	7,825	10,084	11,151
Average annual earnings in year of repayment entry .....	18,620	27,119	33,665	39,565	50,112
Average annual family earnings in year of repayment entry .....	40,600	42,469	49,312	53,524	67,748
<b>Borrowers with any graduate debt</b>					
Current REPAYE .....	7,002	10,259	11,849	12,592	12,901
Proposed REPAYE .....	6,267	8,689	10,476	11,344	12,248
Average annual earnings in year of repayment entry .....	19,145	28,099	35,316	42,226	54,039
Average annual family earnings in year of repayment entry .....	41,174	43,753	52,144	59,351	79,368

To compare the potential benefits for future borrowers from the proposed REPAYE plan, these simulations

abstract from repayment plan choice and instead assume that all future borrowers enroll in a given plan (*i.e.*, the

current or proposed REPAYE plan) and make their scheduled payments. Future borrowers' actual realized benefits will

depend on the extent to which enrollment in IDR increases, which borrowers choose to enroll in IDR, and whether borrowers make their required payments. In general, the proposed REPAYE plan should reduce rates of delinquency and default by providing more borrowers with a \$0 payment and automatically enrolling eligible borrowers once they are 75 days late. That said, borrowers could still end up delinquent or in default if they either owe a non-\$0 payment or the Department cannot access their income information and thus cannot automatically enroll them on IDR.

The proposed regulations would make additional improvements to help borrowers navigate their repayment options by allowing more forms of deferments and forbearances to count toward IDR forgiveness. This ensures that borrowers are not required to choose between pausing payments and earning progress toward forgiveness by making IDR payments and allows borrowers to keep progress toward forgiveness when consolidating.

The proposed regulations streamline and standardize the Direct Loan Program repayment regulations by housing all repayment plan provisions within sections that are listed by repayment plan type: fixed payment, income-driven, and alternative repayment plans. The proposed regulations would also provide clarity for borrowers about their repayment plan options and reduce complexity in the student loan repayment system, including by phasing out the existing IDR plans to the extent the current law allows.

#### *Costs of the Regulatory Changes*

The proposed increased benefits on the REPAYE plan, including reduced monthly payments, a shorter repayment period for some borrowers, and not charging unpaid monthly interest, all represent costs in the form of transfers to borrowers. This will result in transfers to borrowers currently enrolled on an IDR plan, as well as those who choose to sign up for one in the future.

This plan may also result in changes in students' decisions to borrow and how much to borrow, which could have additional future effects on the size of transfers to borrowers. This could result in increased costs to taxpayers in the form of transfers to borrowers if more students choose to borrow than before and/or if borrowers take out greater amounts of loans than before, but then do not fully repay their loans. Some of these transfers to borrowers may be offset if the increased borrowing results in higher rates of postsecondary

program completion and higher subsequent earnings, which generates additional federal income tax revenue.<sup>64</sup>

The proposed regulations may also result in costs resulting from reduced accountability for student loan outcomes at institutions of higher education, which would show up as increased transfers to some poor-performing schools. In particular, the provisions that result in more borrowers having a \$0 monthly payment and automatically enrolling borrowers who are delinquent onto an IDR plan could significantly reduce the rate at which students default. This could in turn lead to fewer institutions losing access to Federal financial aid due to having high cohort default rates. However, the existing cohort default rate already was causing very few institutions to lose access to Federal aid. In the years before the national pause on repayment, only about a dozen institutions a year faced sanctions due to high cohort default rates. Most of these institutions had small enrollment, and many still maintained access to aid thanks to various appeal options. The most recent rates released in fall 2022 showed just eight institutions subject to potential loss of eligibility.<sup>65</sup> The effect of the cohort default rate will also remain small for several years into the future because no Direct Loan borrowers have been able to default since the pause on repayment began in March 2020.

Whether this effect on accountability results in an increased transfer to borrowers would depend on the likelihood that an aid recipient would have enrolled elsewhere and whether their alternative options would have resulted in higher or lower earnings that affected what they would pay on an IDR plan. Of greater concern would be the possibility that providing assistance for borrowers through the updated REPAYE plan would result in more aggressive recruiting by institutions that do not provide valuable returns on the premise

<sup>64</sup> Some research has found evidence that reduced borrowing results in worse academic outcomes and lower levels of retention and completion, and that increased borrowing led to better performance and higher rates of credit completion. See, for example, Barr, Andrew, Kelli Bird, and Benjamin L. Castleman, *The Effect of Reduced Student Loan Borrowing on Academic Performance and Default: Evidence from a Loan Counseling Experiment*, EdWorkingPaper No. 19-89 (June 2019), <https://www.edworkingpapers.com/sites/default/files/ai19-89.pdf>; and Marx, Benjamin M. and Turner, Lesley, *Student Loan Nudges: Experimental Evidence on Borrowing and Educational Attainment* (May 2019), *American Economic Journal: Economic Policy*, Volume 11, Issue 2, <https://www.aeaweb.org/articles?id=10.1257/pol.20180279>. Black et al 2020 <https://www.nber.org/papers/w27658>.

<sup>65</sup> <https://www2.ed.gov/offices/OSFAP/default/management/cdr.html>.

that borrowers who do not find a job do not have to pay. This is a concern that already exists in current IDR plans but could increase with the more generous proposed benefits. Relatedly, institutions may be more inclined to raise tuition in order to shift costs to students when loans are more affordable. This effect may be more pronounced at graduate-level programs than at the undergraduate level because of differences in loan limits. Increases in tuition would not solely affect borrowers and, indirectly, taxpayers; students who do not borrow would face higher education costs as well.

The proposed regulations would also result in modest administrative costs to the Department to implement the changes to the plan, which would require modifications to contracts with servicers. We estimate that, based on comparable changes made in the past, those administrative costs would total approximately \$10 million in systems and other changes. These are costs associated with activities, such as change requests to servicers to make alterations to their systems and servicing platforms. The Department is already in the process of developing data-sharing agreements to support the provision of tax information, pursuant to the FUTURE Act, and would seek to include the IDR provisions in these proposed regulations in those agreements.

It is currently unclear whether the proposed regulations would represent a net cost or benefit to servicers. On the one hand, the provisions that keep more borrowers current and prevent borrowers from defaulting would increase servicer compensation because they are currently paid more each month when a borrower is current. Similarly, any effect of this regulation to increase borrowing would raise compensation for servicers. On the other hand, if the regulations resulted in a decrease in student loan borrowers due to forgiveness then servicers would receive less compensation. It is likely that the factors that would increase compensation are greater than those that decrease it, but determining the exact amounts is not currently possible.

#### *Benefits of the Regulatory Changes*

The proposed IDR plan regulations would benefit multiple groups of stakeholders, especially Federal student loan borrowers. The proposed regulations would allow borrowers in default to make payments under the current IDR plan. The Department believes that this would make it easier for defaulted borrowers to access affordable payments by enrolling in an



IDR plan, make progress toward forgiveness of their loans, and avoid further consequences of default if they are not otherwise able to exit default through rehabilitation or consolidation.

The proposed regulations would also automatically allow the Department to enroll any borrowers who are at least 75 days delinquent on their loan payments and who have previously provided approval for the IRS to share their income information into the IDR plan that is most affordable for them. The Department believes that this would increase the likelihood that struggling borrowers will be enrolled in an IDR plan and will be able to avoid late-stage delinquency or default and the associated consequences. To ensure borrowers are enrolled in the most affordable plan, the Department would not auto-enroll a borrower whose current monthly payment would be less than their payment on the IDR plan that has the lowest payment for them. For instance, it is less likely that a very high-income borrower who is delinquent would be automatically enrolled in IDR because the payment based upon their earnings would be more than what they would pay on the standard 10-year plan.

For many borrowers, enrolling in an IDR plan reduces monthly payments and allows them to use such savings to address current needs. A study found that borrowers who enrolled in an existing IDR plan saw their monthly payments decrease by \$355 compared with a standard non-IDR plan.<sup>66</sup> That study also found that those borrowers

saw an identical increase in consumer spending that was roughly equal to the decrease in monthly student loan payments.<sup>67</sup> Another study estimated that the benefits—the “welfare gains”—of moving from a loan system without IDR plans to a system with IDR plans, if ideally implemented, are “significant,” ranging from about 0.2 percent to 0.6 percent of lifetime consumption.<sup>68</sup>

The proposed regulations would increase the affordability of monthly payments on the REPAYE plan by increasing the amount of income exempt from payments, lowering the share of discretionary income put toward monthly payments for borrowers, providing for a shorter repayment period and earlier forgiveness for some borrowers, and forgiving all monthly unpaid interest to ensure borrowers pay less over their repayment terms. Each of these items provide benefits in different ways. Increasing the amount of income protected to 225 percent of the Federal poverty guidelines would provide two major benefits to borrowers. First, it would result in a larger share of borrowers having a \$0 monthly payment instead of owing relatively small payments. For instance, using the 2022 Federal poverty guidelines, an individual borrower with no dependents who makes \$30,577 a year would no longer make a payment, with the same true of a family of four that earns \$62,437 or less. Single individuals without dependents at 225 percent of

the poverty line make around \$15 an hour, assuming they work full-time all year. By contrast, under the current REPAYE threshold of 150 percent of the Federal poverty guidelines, borrowers would have to make a payment once their income exceeds \$20,385 for a single individual and \$41,625 for a family of four. Those amounts correspond to a wage of roughly \$10 an hour for the single individual. This change thus protects relatively low-wage borrowers from having to make a monthly loan payment.

For borrowers who have incomes above 225 percent of the 2022 Federal poverty guidelines and pay 10 percent of their discretionary incomes, the higher poverty threshold would provide a maximum additional savings of \$85 a month for a single individual and \$173 a month for a family of four compared to the existing REPAYE plan, by providing for their payments to be calculated based on a smaller portion of their incomes. By exempting a larger amount of discretionary income from loan payments, more IDR borrowers on this plan would be able to better afford their costs of living. All borrowers with income above the proposed minimum threshold would receive the same benefit from this aspect of the policy change. These payment reductions will provide critical benefits for borrowers who do make enough money to afford some degree of loan payment each month, but who cannot afford the payment they would be required to make under other existing IDR plans.

TABLE 4—MAXIMUM MONTHLY PAYMENT SAVINGS AT DIFFERENT LEVELS OF INCOME PROTECTION, 2022 FEDERAL POVERTY GUIDELINES (FPL)

Household size	Single		Four	
Payment as percent of discretionary income .....	5	10	5	10
150% FPL (Current REPAYE regulations) .....	\$85	\$170	\$173	\$347
225% FPL (Proposed REPAYE regulations) .....	127	255	260	520
Proposed REPAYE minus Current REPAYE .....	42	85	87	173

**Note:** The 2022 Federal Poverty Guideline is \$13,590 for a single household and \$27,750 for a house of four.

The Department’s proposal would also reduce the percent of discretionary income that borrowers owe on the REPAYE plan from 10 percent to 5 percent on the share of a borrower’s total original loan principal volume attributable to loans received as a student for an undergraduate program. A borrower who only borrowed for a graduate program would pay 10 percent

of their discretionary income. So too would a borrower who had undergraduate loans, fully paid them off, and then took out graduate loans because they no longer have other outstanding loans when entering the IDR plan. A borrower with any outstanding undergraduate loans at the time of entering an IDR plan with a graduate loan would pay an amount

between 5 and 10 percent based upon the weighted average of the original principal balances of the loans attributed to the undergraduate and graduate programs. Reducing the discretionary income share on undergraduate debt would particularly benefit borrowers who only have outstanding loans from their undergraduate education, as these

<sup>66</sup> Mueller, H., & Yannelis, C. (2022). Increasing Enrollment in Income-Driven Student Loan Repayment Plans: Evidence from the Navient Field Experiment. *The Journal of Finance*, 77(1), 367–402. <https://doi.org/10.1111/jofi.13088>.

<sup>67</sup> Ibid.  
<sup>68</sup> Findeisen, S., & Sachs, D. (2016). Education and optimal dynamic taxation: The role of income-contingent student loans. *Journal of Public*

*Economics*, 138, 1–21. <https://doi.org/10.1016/j.jpubeco.2016.03.009>.

borrowers are far more likely to struggle with loan repayment than those who also have graduate loans. As noted in the preamble to these proposed regulations, Department data show that 90 percent of borrowers who are in default on their Federal student loans had only borrowed for their undergraduate education. By contrast, just 1 percent of borrowers who are in default had loans only for graduate studies. Similarly, 5 percent of borrowers who only have graduate debt are in default on their loans, compared with 19 percent of those who have debt from undergraduate programs.<sup>69</sup> By ensuring the reduction in borrowers' payment rate is proportional to a borrowers' undergraduate borrowing, the Department would target assistance to borrowers who are the most likely to struggle with repayment, ensuring undergraduate borrowers are able to afford their monthly loan payments while minimizing the additional costs to taxpayers. The fact that undergraduate loans also have lower loan limits than graduate loans helps to balance the goal of providing assistance with ensuring taxpayers do not bear unwarranted costs.

Not charging unpaid monthly interest after applying a borrower's payment would provide both financial and non-financial benefits for borrowers. For some borrowers, particularly those who have low income for the duration of their time in repayment, this interest benefit results in not charging interest that would otherwise be forgiven after 20 or 25 years of qualifying monthly payments. While these borrowers do not receive a direct financial benefit in this situation, this policy provides a non-financial benefit because borrowers will not see their balances otherwise grow.<sup>70</sup> Qualitative research and borrower complaints received by the Department have shown that interest growth on IDR plans is a significant concern for borrowers.<sup>71</sup> Research has similarly

shown that interest accumulation may discourage repayment.<sup>72</sup> The Department, thus, expects that this benefit may encourage borrowers to keep repaying.

A recent study found that, among borrowers who were at least 15 days late on their payments, switching to an IDR plan reduced the likelihood of delinquency by 22 percentage points and decreased borrowers' outstanding balances over the following 8 months.<sup>73</sup> It is reasonable to expect that more generous IDR plans would decrease the delinquency rate more. Other elements of the proposed regulations would provide benefits to borrowers by giving them more opportunities to earn credit toward forgiveness and by providing for a shorter repayment period before forgiveness for borrowers with smaller original loan principal balances. By counting certain deferments and forbearances toward forgiveness and allowing borrowers to maintain their progress toward forgiveness after they consolidate, borrowers will face fewer instances in which they inadvertently make choices that either give them no credit toward forgiveness or reset all progress made to date. Borrowers who benefit from these changes will receive forgiveness faster than they would have without these regulations. These changes would also reduce complexity in seeking IDR forgiveness, which could help more borrowers successfully navigate repayment and reduce the likelihood that a borrower is so overwhelmed by the process that they choose not to pursue IDR. The shorter time to forgiveness would provide small-dollar borrowers—often the borrowers who did not complete college and who struggle most to afford their loans and avoid default—with a greater incentive to enroll in the IDR plan, increasing the likelihood they avoid delinquency and default.

The proposed regulations would clarify borrowers' repayment plan options and eliminate complexity in the student loan repayment system, including by phasing out the existing IDR plans to the extent the current law

allows. Student borrowers seeking an IDR plan would only be able to choose between the IDR Plan established by section 493C of the HEA and the REPAYE plan. Borrowers already enrolled on the PAYE or ICR plan would maintain their access to those plans. It is estimated that, because of the significantly larger benefits available through the REPAYE plan, most student borrowers would not be worse off by losing access to PAYE or ICR, especially since these would be borrowers not currently enrolled in one of those plans and not all borrowers are eligible for PAYE. The possible exceptions would generally be circumstances either involving graduate borrowers who would prefer higher payments in exchange for forgiveness after 20 years or borrowers who anticipate having payments based upon their income that would be above what they would pay on the 10-year standard plan. Overall, the Department thinks the benefits from simplification exceed the potential higher costs for these borrowers. For the first group, they would still have access to lower monthly payments than they would under either the standard 10-year plan or other IDR plans. For the second group, they would still have lower monthly payments until they reached an amount equal to what they would owe on the 10-year standard plan. These efforts to simplify the available IDR plans thus would help ensure borrowers can easily identify plans that are affordable and appropriate for their circumstances.

The Department believes that, despite the additional costs to taxpayers of the proposed REPAYE plan, both borrowers and the Department would greatly benefit from a plan that helps borrowers avoid delinquency and default, which are loan statuses that create additional challenges, costs, and administrative complexities for collection, as well as carry additional consequences for borrowers. This includes the possibility of having their wages garnished, their tax refunds or Social Security seized, and declines in their credit scores.

In sum, borrowers would benefit from a more affordable plan that limits their loan payments, reduces the amount of time over which they need to repay, provides more protected income for borrowers to meet their family's basic needs, and reduces the chances of default. The Department would benefit from streamlining administration, and taxpayers would benefit from the lower rates of delinquent/defaulted loans.

#### Net Budget Impacts

These proposed regulations are estimated to have a net Federal budget

<sup>69</sup> Department of Education analysis of loan data by academic level for total borrower population and defaulted borrower population, conducted in FSA's Enterprise Data Warehouse, with data as of December 31, 2021.

<sup>70</sup> The Pew Charitable Trusts. Borrowers Discuss the Challenges of Student Loan Repayment. (2020). <https://www.pewtrusts.org/en/research-and-analysis/reports/2020/05/borrowers-discuss-the-challenges-of-student-loan-repayment>.

<sup>71</sup> *Ibid.*; FDR Group. Taking Out and Repaying Student Loans: A Report on Focus Groups with Struggling Student Loan Borrowers. (2015). [https://static.newamerica.org/attachments/2358-why-student-loans-are-different/FDR\\_Group\\_Updated.dc7218ab247a4650902f7afd52d6cae1.pdf](https://static.newamerica.org/attachments/2358-why-student-loans-are-different/FDR_Group_Updated.dc7218ab247a4650902f7afd52d6cae1.pdf). The Department has also received many comments regarding IDR or student loan interest during the rulemaking process and through the FSA Ombudsman's office. <https://www.pewtrusts.org/>

[medica/assets/2020/05/studentloan\\_focusgroup\\_report.pdf](https://static.newamerica.org/attachments/2358-why-student-loans-are-different/FDR_Group_Updated.dc7218ab247a4650902f7afd52d6cae1.pdf); [https://static.newamerica.org/attachments/2358-why-student-loans-are-different/FDR\\_Group\\_Updated.dc7218ab247a4650902f7afd52d6cae1.pdf](https://static.newamerica.org/attachments/2358-why-student-loans-are-different/FDR_Group_Updated.dc7218ab247a4650902f7afd52d6cae1.pdf). The Department has also received many comments regarding IDR or student loan interest during the rulemaking process and through the FSA Ombudsman's office.

<sup>72</sup> *Ibid.*  
<sup>73</sup> Herbst, D. The Impact of Income-Driven Repayment on Student Borrower Outcomes. American Economic Journal: Applied Economics. <https://www.aeaweb.org/articles?id=10.1257/app.20200362>.

impact in costs over the affected loan cohorts of \$137.9 billion, consisting of a modification of \$76.8 billion for loan cohorts through 2022 and estimated costs of \$61.1 billion for loan cohorts 2023 to 2032. A cohort reflects all loans originated in a given fiscal year. Consistent with the requirements of the Credit Reform Act of 1990, budget cost estimates for the student loan programs reflect the estimated net present value of all future non-administrative Federal costs associated with a cohort of loans.

*IDR Plan Changes*

The changes to the REPAYE plan would offer borrowers a more generous IDR plan that would have a net budget impact of approximately \$137.9 billion, consisting of a modification of \$76.8 billion for cohorts through 2022 and \$61.1 for cohorts 2023–2032. This estimate is based on the President’s Budget for 2023 baseline as modified to account for the PSLF waiver, the IDR waiver, the payment pause extension to December 2022, and the August 2022 announcement that the Department will discharge up to \$20,000 in Federal student loans for borrowers who make under \$125,000 as an individual or \$250,000 as a family.

The net budget estimate in this RIA was produced prior to the announcement of a subsequent extension of the payment pause beyond December 31, 2022. The effect of this

payment pause extension on the net budget impact will be reflected in the final rule. The net budget impact also takes into account the regulatory changes in the Notices of Final Rule for Affordability and Students that published on November 1, 2022, 87 FR 65904 and Final Regulations: Pell Grants for Prison Education Programs; Determining the Amount of Federal Education Assistance Funds Received by Institutions of Higher Education (90/10); Change in Ownership and Change in Control that published on October 28, 2022, 87 FR 65426, that would make changes to several other areas relating to Federal student loans including interest capitalization, loan forgiveness programs, loan discharges, and the 90/10 rule.

The proposed regulations would result in costs for taxpayers in the form of transfers to borrowers, as borrowers enrolled in the REPAYE plan would generally make lower payments on the new plan as compared to current IDR plans. Not charging remaining monthly interest after applying a borrower’s payment also increases costs for taxpayers in the form of transfers, as borrowers may otherwise eventually repay some of the accumulating interest prior to forgiveness on current IDR plans. Costs to taxpayers would also increase if the availability of improved repayment options increases the volume and quantity of loans for future cohorts

of students. The budget estimates assume that there will be no change in volume or quantity of loans issued due to the improved terms. Additional borrowing would likely increase costs of the regulations, but the magnitude of the impact would depend on the characteristics of those borrowing more and data limitations make it challenging to anticipate who such borrowers would be. To estimate the effect of the proposed changes, the Department revised the payment calculations in the IDR sub-model used for cost estimates for the IDR plans. Changing the percentage of income applied to a payment is a straightforward change with a significant effect on the cashflows when compared to the baseline. The element that is less clear is what decision about plan choice existing borrowers will make when the revised REPAYE plan is available in 2023 and beyond. As in the case of the current REPAYE plan, the new REPAYE plan does not include a standard repayment cap that limits borrowers’ maximum monthly payment. In this case, the Department has run the payment calculations twice for each borrower—once under the revised REPAYE option and again under the borrower’s baseline plan—and assumed each borrower chooses the option with the lowest net present value (NPV) of costs. Table 5 shows the result of this plan assignment.

TABLE 5—PLAN ASSIGNMENT FOR BORROWERS ENTERING REPAYMENT IN FY 2024

Percent Distribution of Borrowers in Baseline Plan When Revised REPAYE is Available				
Baseline plan	ICR	IBR—15 percent	IBR—10 percent	Revised REPAYE
ICR .....	0	.....	.....	100
IBR—15 percent .....	.....	20.94	.....	79.06
IBR—10 percent .....	.....	.....	8.41	91.59
REPAYE .....	.....	.....	.....	100
Total .....	0	1.12	5.3	93.59

In categorizing plans, we include the 10-percent and 15-percent IBR plans with PAYE borrowers included in the IBR–10 percent row, as borrowers cannot choose PAYE in 2024 or later. Those remaining in 15-percent IBR represent approximately 5 percent of borrowers who first borrowed prior to 2008 and entered repayment for the last time in 2024.

This approach assumes borrowers know their income and family profile trajectories over the life of their loans and choose the plan that offers the lowest lifetime, present-discounted payments. The payment comparison for

plan assignment assumes borrowers do not experience any events that disrupt their time to forgiveness or payoff, such as prepayment, discharge, or default, under either the baseline or proposed plan revisions. It does take into account the effect of broad-based forgiveness when doing the comparison. Possible alternatives include choosing the plan that has the most favorable monthly payments in 2023 or another near-term year, assuming that a graduate borrower whose estimated income in a given year or averaged across their repayment period would result in payment at the standard repayment cap would remain

in their existing plan and setting a minimum amount of payment reduction that would trigger borrowers to change plans. The Department recognizes that borrowers may use different logic when choosing a repayment plan, such as comparing near-term monthly payments, and will not have information about their future incomes and family patterns to match this type of analysis, but we believe any decision logic would result in a high percentage of borrowers in the new REPAYE plan. By assuming IDR borrowers take the plan with the lowest long-run cost, this generates a higher-end estimate of the

net budget impact of the proposed changes for borrowers currently enrolled in IDR plans, though the IDR overall estimate is potentially understating total costs. While it is possible that more people may be willing to take on student loan debt with the safety net of the more generous IDR plan, we have not estimated the extent to which there could be increases in loan volumes or Pell Grants from potential new students. Absent evidence of the magnitude of increase, loan type distribution, risk group profiles, and future income profiles of these potential borrowers, whose postsecondary educational decisions likely involve more than just concern about repayment of debt, the net budget impact of this potential volume increase is unknown. The impact of borrowers switching into IDR plans from non-IDR plans is also a potential factor that we do not estimate here. We have limited information on these borrowers' income and family profiles in repayment and already have high rates of IDR participation in our

model. Administrative issues, lack of information, or simply sticking with the default option may be the reason many of these borrowers are not in an IDR plan already, but others may have made the choice that a non-IDR plan is preferable for them. Depending on their anticipated income profiles or comfort with their existing plan, the potential shift of these borrowers is very uncertain and, without information on the income profiles of potential shifters, we are not able to estimate the potential budget impact of this change. As a result, we are concerned that building in a sensitivity analysis that includes adjustments for increased take up could present inaccurate estimates. We will, however, continue to review this issue during the public comment period to see if there are any possible additional refinements. Regardless, to the extent such increases in volume and increases in IDR participation are observed, they will be reflected in future loan program re-estimates.

With the significant budget impact from these proposed revisions, the

Department seeks to show the effects of the various changes individually. Table 6 details the scores for the modification cohorts through 2022 and the outyears through 2032 when the proposed changes are run with one or more elements kept as in the baseline. This provides an indication of the impact of the specific proposed changes. The scores for each component will not sum to the total because of the significant interaction between elements of the proposed changes. For example, when the change to 5 percent of income and to 225 percent of the Federal poverty level are combined, the estimated impact is \$127.4 billion compared to \$132.3 billion when adding the individual savings together. These estimates are removing the proposed change from the estimate of the total package, so a negative value represents a savings from the total policy estimate. This negative value indicates that the element has a cost when included, by reducing transfers from borrowers to the government and taxpayers.

TABLE 6—IDR COMPONENT ESTIMATES  
[\$ in billions]

	Income protection kept at 150% of FPL	No 5% of income payment	No elimination of interest accrual	No balance-based early forgiveness	Other provisions
Modification through cohort 2022 .....	-\$37.3	-\$29.6	-\$5.4	-\$1.2	-\$3.4
Outlays for cohorts 2023–2032 .....	-36.4	-29.0	-9.6	-2.5	-4.5
Total .....	-73.7	-58.6	-14.9	-3.7	-7.9

**Note:** Savings are relative to the scenario in which the proposed rule is implemented in full, so a negative number reflects a smaller increase in costs.

As can be seen in Table 6, the increase in the income protection to 225 percent of the Federal poverty guidelines and the percentage of income on which payments are based are the most significant factors in the estimated impact of the proposed changes. Borrowers' projected incomes are another important element for cost estimates for IDR plans, so we have run two sensitivity analyses that shift borrower incomes. The Department uses NSLDS income data to adjust the projected incomes used in its IDR model for accuracy. For the alternate scenarios, we increase the income adjustment factor by 5 percentage points and decrease it by 10 percentage points to examine the impact of changes in income. For example, the income adjustment factor used in the baseline was .65, so the adjustment factor for the

sensitivities are .70 and .55, respectively. From past sensitivity runs, we know that increasing and decreasing the incomes by the same factor results in similar changes in costs, so the different variations here provide a sense of two different shifts in incomes. When compared to the same baseline, we estimate that regulations with a 5-point increase in incomes would cost a total of \$97.0 billion and the 10-point decrease would cost \$209.4 billion. Recall that our central estimate of the proposed rule's net budget impact is \$137.9 billion above baseline. Incomes are likely the factor in the IDR model with the greatest effect, but other aspects, such as projected family size, events such as defaults, or discharges, also affect the estimates.

We also wanted to consider the distributional effects of the proposed

changes to the extent we have information. One benefit we hope to see from the regulations is reduced delinquency and default which should particularly benefit lower-income borrowers, but these potential benefits are not currently included in the model. The sample of borrowers used to estimate costs in IDR plans have projected income profiles of 31 years of AGIs for the borrower or household, depending on tax filing status. Table 7 summarizes the change in payments between the President's budget baseline for FY 2023 as modified for waivers, broad-based debt relief, and recent regulatory packages and the proposed regulation for a representative cohort of borrowers, those entering repayment in FY 2024.

TABLE 7—ESTIMATED EFFECTS OF IDR PROPOSALS BY INCOME RANGE AND GRADUATE STUDENT STATUS FOR BORROWERS ENTERING REPAYMENT IN FY 2024

	<\$65,000	\$65,000 to \$100,000	Above \$100,000
<b>Only Undergraduate Borrowing:</b>			
% of Pop .....	25.8%	24.1%	13.2%
% of Debt .....	9.9%	12.1%	7.6%
Mean Debt .....	\$27,452	\$35,843	\$40,722
Mean Payment Reduction .....	\$12,329	\$19,807	\$16,702
	<\$65,000	\$65,000 to \$100,000	Above \$100,000
<b>Borrowed as Graduate Student:</b>			
% of Pop .....	6.6%	12.2%	18.2%
% of Debt .....	10.7%	20.4%	39.3%
Mean Debt .....	\$128,467	\$124,361	\$145,093
Mean Payment Reduction .....	\$16,876	\$17,277	\$(2,803)

**Note:** Debt is measured as the outstanding balance when the borrower enters repayment, reductions in payments are measured over the life of the loan, and income is the average income over the potential repayment period for borrowers entering repayment in FY 2024.

As can be seen, all groups would see significant reductions in average payments, except those who borrowed as graduate students and have over \$100,000 in average income. There are some limitations to the savings for the borrowers with earnings at or below \$65,000, because a portion of these borrowers already have a \$0 payment under the current REPAYE plan. Once their payment hits \$0 they cannot receive any greater savings under the new plan. Moreover, borrowers in this category generally have lower loan balances; thus, the amount of potential savings is also smaller. Finally, the marginal benefit of a dollar saved is greater for lower-income borrowers than higher-income borrowers, suggesting

that similar or lower savings in absolute dollar terms could generate greater value for lower-income groups relative to high-income groups.

Since graduate student borrowers have higher debt, on average, they are less likely to benefit from the reduced time to forgiveness based on a low balance, as shown in Table 8. The high-income, high-debt graduate students may not benefit from the rate reduction and the continued absence of the standard payment cap on REPAYE will likely affect them more. Some may still choose revised REPAYE if their payments are lower in the beginning and then get higher at the end of the repayment period. Table 7 does not account for any timing effects, as such

effects are likely to be idiosyncratic and challenging to model in a systemic manner. Payments on loans attributed to graduate programs would remain at a 10 percent discretionary income level and these borrowers have high balances so would not benefit from reduced time to forgiveness. That means two of the major drivers of reductions in borrower payments from the proposed regulations—early forgiveness and the reduction to 5 percent for payments attributed to undergraduate loans—are less likely to apply to that population. The number of expected years to forgiveness in Table 8 is based on the borrower’s balance and does not take into account any deferments, forbearances, or early payoffs.

TABLE 8—YEARS TO FORGIVENESS AND DISTRIBUTION OF BALANCES FOR BORROWERS ENTERING REPAYMENT IN FY 2024 UNDER PROPOSED RULE

Expected years to forgiveness	Under-graduate-only borrowers	Any graduate borrowing	Overall
10 .....	12.89	0.31	8.05
11 .....	1.35	0.04	0.85
12 .....	1.53	0.05	0.96
13 .....	1.67	0.07	1.05
14 .....	1.9	0.11	1.21
15 .....	2.0	0.1	1.27
16 .....	2.29	0.08	1.44
17 .....	2.21	0.08	1.39
18 .....	2.44	0.1	1.54
19 .....	2.41	0.09	1.52
20 .....	69.32	0.13	42.7
21 .....	.....	0.21	0.08
22 .....	.....	0.1	0.04
23 .....	.....	0.19	0.07
24 .....	.....	0.21	0.08
25 .....	.....	98.13	37.75

*Accounting Statement*

As required by OMB Circular A-4, we have prepared an accounting statement showing the classification of the

expenditures associated with the provisions of these regulations. This table provides our best estimate of the changes in annual monetized transfers

as a result of these proposed regulations. Expenditures are classified as transfers from the Federal government to affected student loan borrowers.

TABLE 9—ACCOUNTING STATEMENT: CLASSIFICATION OF ESTIMATED EXPENDITURES  
[In millions]

Category	Benefits	
Improved options for affordable loan repayment .....	Not quantified.	
Increased college enrollment, attainment, and degree completion .....	Not quantified.	
Reduced risk of delinquency and default for borrowers .....	Not quantified.	
Reduced administrative burden for Department due to reduced default and collection actions .....	Not quantified.	

Category	Costs	
	7%	3%
Costs of compliance with paperwork requirements .....	TBD	TBD
Increased administrative costs to Federal government to updates systems and contracts to implement the proposed regulations .....	\$1.1	\$1.3

Category	Transfers	
	7%	3%
Reduced transfers from IDR borrowers due to increased income protection, lower income percentage for payment, potential early forgiveness based on balance, and other IDR program changes .....	16,285	14,832

*Alternatives Considered*

As part of the development of these proposed regulations, the Department engaged in a negotiated rulemaking process in which we received comments and proposals from non-Federal negotiators representing numerous impacted constituencies. These included higher education institutions, consumer advocates, students, borrowers, financial aid administrators, accrediting agencies, and State attorneys general. Non-Federal negotiators submitted a variety of proposals relating to the issues under discussion. Information about these proposals is available on our negotiated rulemaking website at <https://www2.ed.gov/policy/highered/reg/hearulemaking/2021/index.html>.

The Department considered creating a new repayment plan. However, we determined that modifying the existing REPAYE plan, rather than creating a new repayment plan, could reduce concerns of introducing new complexity, a goal the negotiators primarily shared.

The Department also considered keeping payments set at 10 percent of discretionary income for 20 years for all undergraduate borrowers and 25 years for all graduate borrowers, the cost of which is shown in Table 6 as –\$58.6 billion less than the full package that includes the reduction in payments. However, negotiators largely opposed that proposal as insufficient to address

the needs of some borrowers. The Department has evaluated the needs of borrowers and determined that the benefits of providing a more generous repayment plan, which will help to encourage borrowers to enroll in a single plan and ultimately contribute to a more streamlined set of repayment options, outweighed the benefits of retaining the current plan. The Department also believes that, for many borrowers, 10 percent of discretionary income may be too high and 20 years may be too long, especially for borrowers who accrued only small amounts of debt over a short period of time in postsecondary education. We are concerned these factors may lead borrowers not to enroll in IDR plans, even when it would make their payments more affordable and help them to avoid delinquency and default.

The Department also considered annual cancellation of some debt for borrowers, a suggestion proposed by several negotiators, but determined that doing so is not within our statutory authority under the HEA. The Department felt that its proposal not to charge accrued-but-unpaid interest, preventing negative amortization, effectively addressed the substance of the problem while ensuring that borrowers who earn more after leaving school repay more of their loans.

*Regulatory Flexibility Act*

The Secretary certifies, under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*), that this proposed regulatory action would not have a significant economic impact on a substantial number of “small entities.” The Small Business Administration (SBA) defines “small institution” using data on revenue, market dominance, tax filing status, governing body, and population. The majority of entities to which the Office of Postsecondary Education’s (OPE) regulations apply are postsecondary institutions, however, which do not report such data to the Department. As a result, for purposes of this NPRM, the Department proposes to continue defining “small entities” by reference to enrollment, to allow meaningful comparison of regulatory impact across all types of higher education institutions. The enrollment standard for a small two-year institution is less than 500 full-time-equivalent (FTE) students and for a small four-year institution, less than 1,000 FTE students.<sup>74</sup>

<sup>74</sup> In previous regulations, the Department categorized small businesses based on tax status. Those regulations defined “non-profit organizations” as “small organizations” if they were independently owned and operated and not dominant in their field of operation, or as “small entities” if they were institutions controlled by governmental entities with populations below 50,000. Those definitions resulted in the categorization of all private nonprofit organizations as small and no public institutions as small. Under

TABLE 10—SMALL INSTITUTIONS UNDER ENROLLMENT-BASED DEFINITION

Level	Type	Small	Total	Percent
2-year	Public	328	1,182	27.75
2-year	Private	182	199	91.46
2-year	Proprietary	1,777	1,952	91.03
4-year	Public	56	747	7.50
4-year	Private	789	1,602	49.25
4-year	Proprietary	249	331	75.23
Total		3,381	6,013	56.23

Source: 2018–19 data reported to the Department.

Table 11 summarizes the number of institutions affected by these proposed regulations. The Department has determined that there would be no

economic impact on small entities affected by the regulations because IDR plans are between borrowers and the Department. As seen in Table 11, the

average total revenue at small institutions ranges from \$2.3 million for proprietary institutions to \$21.3 million at private institutions.

TABLE 11—TOTAL REVENUES AT SMALL INSTITUTIONS

Control	Average total revenues for small institutions	Total revenues for all small institutions
Private	21,288,171	20,670,814,269
Proprietary	2,343,565	4,748,063,617
Public	15,398,329	5,912,958,512

Note: Based on analysis of IPEDS enrollment and revenue data for 2018–19.

The IDR proposed regulations will not have a significant impact to a substantial number of small entities because IDR plans are between the borrower and the Department. As noted in the Paperwork Reduction Act section, burden related to the proposed regulations will be assessed in a separate information collection process and that burden is expected to involve individuals more than institutions of any size.

*Paperwork Reduction Act of 1995*

As part of its continuing effort to reduce paperwork and respondent burden, the Department provides the general public and Federal agencies with an opportunity to comment on proposed and continuing collections of information in accordance with the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3506(c)(2)(A)). This helps ensure that the public understands the Department’s collection instructions, respondents can provide the requested data in the desired format, reporting burden (time and financial resources) is minimized, collection instruments are clearly understood, and the Department can properly assess the impact of collection requirements on respondents.

Proposed § 685.209 contains information collection requirements.

Under the PRA, the Department would, at the required time, submit a copy of these sections and an Information Collections Request to OMB for its review. PRA approval would be sought via a separate information collection process. The Department would publish these information collections in the **Federal Register** and seek public comment on those documents. A Federal agency may not conduct or sponsor a collection of information unless OMB approves the collection under the PRA and the corresponding information collection instrument displays a currently valid OMB control number. Notwithstanding any other provision of law, no person is required to comply with, or is subject to penalty for failure to comply with, a collection of information if the collection instrument does not display a currently valid OMB control number. In the final regulations, we would display the control numbers assigned by OMB to any information collection requirements proposed in this NPRM and adopted in the final regulations.

*Section 685.209—Income-Driven Repayment Plans*

**Requirements:** The Department proposes to amend § 685.209 to include regulations for all of the IDR plans,

which are plans with monthly payments based in whole or in part on income and family size. These amendments include changes to the PAYE, REPAYE, IBR and ICR plans. Specifically, § 685.209 would be amended to modify the terms of the REPAYE plan to reduce monthly payment amounts to 5 percent of discretionary income for the percent of a borrower’s total original loan volume attributable to loans received as students for an undergraduate program; under the modified REPAYE plan, increase the amount of discretionary income exempted from the calculation of payments to 225 percent; under the modified REPAYE plan, discontinue the practice of charging unpaid accrued interest each month after applying a borrower’s payment; simplify the alternative repayment plan that a borrower is placed on if they fail to recertify their income and allow up to 12 payments on this plan to count toward forgiveness; reduce the time to forgiveness under the REPAYE plan for borrowers with low original loan balances; modify the IBR plan regulations to clarify that borrowers in default are eligible to make payments under the plan; modify the regulations for all IDR plans to allow for periods under certain deferments and forbearances to count toward

the previous definition, proprietary institutions were considered small if they are independently owned and operated and not dominant in their field of operation with total annual revenue below

\$7,000,000. Using FY 2017 IPEDs finance data for proprietary institutions, 50 percent of 4-year and 90 percent of 2-year or less proprietary institutions would be considered small. By contrast, an

enrollment-based definition applies the same metric to all types of institutions, allowing consistent comparison across all types.

forgiveness; modify the regulations applicable to all IDR plans to allow borrowers an opportunity to make catch-up payments for all other periods in deferment or forbearance; modify the regulations for all IDR plans to clarify that a borrower’s progress toward forgiveness does not fully reset when a borrower consolidates loans on which a borrower had previously made qualifying payments; modify the regulations for all IDR plans to provide that any borrowers who are at least 75 days delinquent on their loan payments will be automatically enrolled in the IDR plan for which the borrower is eligible and that produces the lowest

monthly payments for them; and limit eligibility for the ICR plan to (1) borrowers who began repaying under the ICR plan before the effective date of the regulations, and (2) borrowers whose loans include a Direct Consolidation Loan made on or after July 1, 2006, that repaid a parent PLUS loan.

*Burden Calculation:* These changes would require an update to the current IDR plan request form used by borrowers to sign up for IDR, complete annual recertification, or have their payment amount recalculated. The form update would be completed and made available for comment through a full public clearance package before being

made available for use by the effective date of the regulations. The burden changes would be assessed to OMB Control Number 1845–0102, Income Driven Repayment Plan Request for the William D. Ford Federal Direct Loans and Federal Family Education Loan Programs. Consistent with the discussions above, Table 12 describes the sections of the proposed regulations involving information collections, the information being collected and the collections that the Department will submit to OMB for approval and public comment under the PRA, and the estimated costs associated with the information collections.

TABLE 12—PRA INFORMATION COLLECTION

Regulatory section	Information collection	OMB control number and estimated burden	Estimated cost unless otherwise noted
§ 685.209 IDR Plans.	The proposed regulations at § 685.209 would be amended to include regulations for all of the IDR plans. These amendments include changes to the PAYE, IBR, and ICR plans, and primarily to the REPAYE plan..	1845–0102 Burden will be cleared at a later date through a separate information collection for the form..	Costs will be cleared through separate information collection for the form.

We will prepare an Information Collection Request for the information collection requirements following the finalization of this NPRM. A notice will be published in the **Federal Register** at that time providing a draft version of the form for public review and inviting public comment. The proposed collection associated with this NPRM is 1845–0102.

*Intergovernmental Review*

This program is subject to Executive Order 12372 and the regulations in 34 CFR part 79. One of the objectives of the Executive Order is to foster an intergovernmental partnership and a strengthened federalism. The Executive order relies on processes developed by State and local governments for coordination and review of proposed Federal financial assistance.

This document provides early notification of our specific plans and actions for this program.

*Assessment of Education Impact*

In accordance with section 411 of the General Education Provisions Act, 20 U.S.C. 1221e–4, the Secretary particularly requests comments on whether these proposed regulations would require transmission of information that any other agency or authority of the United States gathers or makes available.

*Federalism*

Executive Order 13132 requires us to ensure meaningful and timely input by State and local elected officials in the development of regulatory policies that have federalism implications. “Federalism implications” means substantial direct effects on the States, on the relationship between the National Government and the States, or on the distribution of power and responsibilities among the various levels of government. The proposed regulations do not have federalism implications.

*Accessible Format:* On request to the program contact person(s) listed under **FOR FURTHER INFORMATION CONTACT**, individuals with disabilities can obtain this document in an accessible format. The Department will provide the requestor with an accessible format that may include Rich Text Format (RTF) or text format (txt), a thumb drive, an MP3 file, braille, large print, audiotape, or compact disc, or other accessible format.

*Electronic Access to This Document:* The official version of this document is the document published in the **Federal Register**. You may access the official edition of the **Federal Register** and the Code of Federal Regulations at [www.govinfo.gov](http://www.govinfo.gov). At this site you can view this document, as well as all other documents of this Department published in the **Federal Register**, in text or Adobe Portable Document

Format (PDF). To use PDF, you must have Adobe Acrobat Reader, which is available free at the site.

You may also access documents of the Department published in the **Federal Register** by using the article search feature at [www.federalregister.gov](http://www.federalregister.gov). Specifically, through the advanced search feature at this site, you can limit your search to documents published by the Department. List of Subjects in 34 CFR Part 685.

Administrative practice and procedure, Colleges and universities, Education, Loan programs-education, Reporting and recordkeeping requirements, Student aid, Vocational education.

**Miguel A. Cardona,**  
*Secretary of Education.*

For the reasons discussed in the preamble, the Secretary proposes to amend part 685 of title 34 of the Code of Federal Regulations as follows:

■ 1. The authority citation for part 685 continues to read as follows:

**Authority:** 20 U.S.C. 1070g, 1087a, *et seq.*, unless otherwise noted.

■ 2. In § 685.102, in paragraph (b) amend the definition of “satisfactory repayment arrangement” by revising paragraph (2)(ii) to read as follows:

**§ 685.102 Definitions.**

\* \* \* \* \*  
(b) \* \* \*



Satisfactory repayment arrangement:

(2) \* \* \*

(ii) Agreeing to repay the Direct Consolidation Loan under one of the income-driven repayment plans described in § 685.209.

\* \* \* \* \*

■ 3. Section 685.208 is amended by:

- a. Revising the section heading.
  - b. Revising paragraphs (a) and (k).
  - c. Removing paragraphs (l) and (m).
- The revisions read as follows:

**§ 685.208 Fixed payment repayment plans.**

(a) *General.* Under a fixed payment repayment plan, the borrower's required monthly payment amount is determined based on the amount of the borrower's Direct Loans, the interest rates on the loans, and the repayment plan's maximum repayment period.

\* \* \* \* \*

(k) The repayment period for any of the repayment plans described in this section does not include periods of authorized deferment or forbearance.

■ 4. Section 685.209 is revised to read as follows:

**§ 685.209 Income-driven repayment plans.**

(a) *General.* Income-driven repayment (IDR) plans are repayment plans that base the borrower's monthly payment amount on the borrower's income and family size. The four IDR plans are—

(1) The Revised Pay As You Earn (REPAYE) plan;

(2) The Income-Based Repayment (IBR) plan;

(3) The Pay As You Earn (PAYE) Repayment plan; and

(4) The Income-Contingent Repayment (ICR) plan;

(b) *Definitions.* The following definitions apply to this section:

*Discretionary income* means the greater of \$0 or the difference between the borrower's income as determined under paragraph (e)(1) and—

(i) For the REPAYE plan, 225 percent of the applicable Federal poverty guideline;

(ii) For the IBR and PAYE plans, 150 percent of the applicable Federal poverty guideline; and

(iii) For the ICR plan, 100 percent of the applicable Federal poverty guideline.

*Eligible loan*, for purposes of determining partial financial hardship status and for adjusting the monthly payment amount in accordance with paragraph (g) of this section means—

(i) Any outstanding loan made to a borrower under the Direct Loan Program, except for a Direct PLUS Loan made to a parent borrower, or a Direct Consolidation Loan that repaid a Direct PLUS Loan or a Federal PLUS Loan made to a parent borrower; and

(ii) Any outstanding loan made to a borrower under the FFEL Program, except for a Federal PLUS Loan made to a parent borrower, or a Federal Consolidation Loan that repaid a Federal PLUS Loan or a Direct PLUS Loan made to a parent borrower.

*Family size* means, for all IDR plans, the number of individuals that is determined by adding together—

(i) The borrower;

(ii) The borrower's spouse, for a married borrower filing jointly;

(iii) The borrower's children, including unborn children who will be born during the year the borrower certifies family size, if the children receive more than half their support from the borrower; and

(iv) Other individuals if, at the time the borrower certifies family size, the other individuals live with the borrower and receive more than half their support from the borrower and will continue to receive this support from the borrower for the year for which the borrower certifies family size.

*Income* means either—

(i) The borrower's and, if applicable, the spouse's, Adjusted Gross Income (AGI) as reported to the Internal Revenue Service; or

(ii) The amount calculated based on alternative documentation of all forms of taxable income received by the borrower and provided to the Secretary.

*Income-driven repayment plan* means a repayment plan in which the monthly payment amount is primarily determined by the borrower's income.

*Monthly payment or the equivalent* means—

(i) A required monthly payment as determined in accordance with paragraphs (k)(4)(i) through (iii) of this section;

(ii) A month in which a borrower receives a deferment or forbearance of repayment under one of the deferment or forbearance conditions listed in paragraphs (k)(4)(iv) of this section; or

(iii) A month in which a borrower makes a payment in accordance with procedures in paragraph (k)(6) of this section.

*New borrower* means—

(i) For the purpose of the PAYE plan, an individual who—

(A) Has no outstanding balance on a Direct Loan Program loan or a FFEL Program loan as of October 1, 2007, or who has no outstanding balance on such a loan on the date the borrower receives a new loan after October 1, 2007; and

(B) Receives a disbursement of a Direct Subsidized Loan, Direct Unsubsidized Loan, a Direct PLUS Loan made to a graduate or professional student, or a Direct Consolidation Loan

on or after October 1, 2011, except that a borrower is not considered a new borrower if the Direct Consolidation Loan repaid a loan that would otherwise make the borrower ineligible under paragraph (1) of this definition.

(ii) For the purposes of the IBR plan, an individual who has no outstanding balance on a Direct Loan or Federal Family Education Loan (FFEL) loan on July 1, 2014, or who has no outstanding balance on such a loan on the date the borrower obtains a loan after July 1, 2014.

*Partial financial hardship* means—

(i) For an unmarried borrower or for a married borrower whose spouse's income and eligible loan debt are excluded for purposes of determining a payment amount under the IBR or PAYE plans in accordance with paragraph (e) of this section, a circumstance in which the Secretary determines that the annual amount the borrower would be required to pay on the borrower's eligible loans under the 10-year standard repayment plan is more than what the borrower would pay under the IBR or PAYE plan as determined in accordance with paragraph (f) of this section. The Secretary determines the annual amount that would be due under the 10-year Standard Repayment plan based on the greater of the balances of the borrower's eligible loans that were outstanding at the time the borrower entered repayment on the loans or the balances on those loans that were outstanding at the time the borrower selected the IBR or PAYE plan.

(ii) For a married borrower whose spouse's income and eligible loan debt are included for purposes of determining a payment amount under the IBR or PAYE plan in accordance with paragraph (e) of this section, the Secretary's determination of partial financial hardship as described in paragraph (1) of this definition is based on the income and eligible loan debt of the borrower and the borrower's spouse.

*Poverty guideline* refers to the income categorized by State and family size in the Federal poverty guidelines published annually by the United States Department of Health and Human Services pursuant to 42 U.S.C. 9902(2). If a borrower is not a resident of a State identified in the Federal poverty guidelines, the Federal poverty guideline to be used for the borrower is the Federal poverty guideline (for the relevant family size) used for the 48 contiguous States.

*Support* includes money, gifts, loans, housing, food, clothes, car, medical and dental care, and payment of college costs.

(c) *Borrower eligibility for IDR plans.*

(1) Except as provided in paragraphs (d)(2) of this section, defaulted loans may not be repaid under an IDR plan.

(2) Any Direct Loan borrower may repay under the REPAYE plan if the borrower has loans eligible for repayment under the plan;

(3)(i) Except as provided in paragraph (c)(3)(ii) of this section, any Direct Loan borrower may repay under the IBR plan if the borrower has loans eligible for repayment under the plan, and has a partial financial hardship when the borrower initially enters the plan.

(ii) A borrower who has made 120 or more qualifying repayments under the REPAYE plan on or after July 1, 2023, may not enroll in the IBR plan.

(4) A borrower may repay under the PAYE plan only if the borrower—

(i) Has loans eligible for repayment under the plan;

(ii) Is a new borrower;

(iii) Has a partial financial hardship when the borrower initially enters the plan; and

(iv) Began repaying under the PAYE plan before the effective date of these regulations and wishes to continue repaying under the PAYE plan. A borrower who is repaying under the PAYE plan and changes to a different repayment plan in accordance with § 685.210(b) may not re-enroll in the PAYE plan.

(5)(i) Except as provided in paragraph (c)(4)(ii) of this section, a borrower may repay under the ICR plan only if the borrower—

(A) Has loans eligible for repayment under the plan; and

(B) Began repaying under the ICR plan before the effective date of these regulations and wishes to continue repaying under the ICR plan. A borrower who is repaying under the ICR plan and changes to a different repayment plan in accordance with § 685.210(b) may not re-enroll in the ICR plan unless they meet the criteria in paragraph (c)(4)(ii) of this section.

(ii) Any borrower may choose the ICR plan to repay a Direct Consolidation Loan made on or after July 1, 2006, that repaid a parent Direct PLUS Loan or a parent Federal PLUS Loan.

(d) *Loans eligible to be repaid under an IDR plan.* (1) The following loans are eligible to be repaid under the REPAYE and PAYE plans: Direct Subsidized Loans, Direct Unsubsidized Loans, Direct PLUS Loans made to graduate or professional students, and Direct Consolidation Loans that did not repay a Direct parent PLUS Loan or a Federal parent PLUS Loan;

(2) The following loans, including defaulted loans, are eligible to be repaid

under the IBR plan: Direct Subsidized Loans, Direct Unsubsidized Loans, Direct PLUS Loans made to graduate or professional students, and Direct Consolidation Loans that did not repay a Direct parent PLUS Loan or a Federal parent PLUS Loan.

(3) The following loans are eligible to be repaid under the ICR plan: Direct Subsidized Loans, Direct Unsubsidized Loans, Direct PLUS Loans made to graduate or professional students, and all Direct Consolidation Loans (including Direct Consolidation Loans that repaid Direct parent PLUS Loans or Federal parent PLUS Loans), except for Direct PLUS Consolidation Loans made before July 1, 2006.

(e) *Treatment of income and loan debt.* (1) *Income.*

(i) For purposes of calculating the borrower's monthly payment amount under the REPAYE, IBR, and PAYE plans—

(A) For an unmarried borrower, a married borrower filing a separate Federal income tax return, or a married borrower filing a joint Federal tax return who certifies that the borrower is currently separated from the borrower's spouse or is currently unable to reasonably access the spouse's income, only the borrower's income is used in the calculation.

(B) For a married borrower filing a joint Federal income tax return, except as provided in paragraph (e)(1)(i)(A) of this section, the combined income of the borrower and spouse is used in the calculation.

(ii) For purposes of calculating the monthly payment amount under the ICR plan—

(A) For an unmarried borrower, a married borrower filing a separate Federal income tax return, or a married borrower filing a joint Federal tax return who certifies that the borrower is currently separated from the borrower's spouse or is currently unable to reasonably access the spouse's income, only the borrower's income is used in the calculation.

(B) For married borrowers (regardless of tax filing status) who elect to repay their Direct Loans jointly under the ICR Plan or (except as provided in paragraph (e)(1)(ii)(A) of this section) for a married borrower filing a joint Federal income tax return, the combined income of the borrower and spouse is used in the calculation.

(2) *Loan debt.* (i) For the REPAYE, IBR, and PAYE plans, the spouse's eligible loan debt is included for the purposes of adjusting the borrower's monthly payment amount as described in paragraph (g) of this section if the spouse's income is included in the

calculation of the borrower's monthly payment amount in accordance with paragraph (e)(1) of this section.

(ii) For the ICR plan, the spouse's loans that are eligible for repayment under the ICR plan in accordance with paragraph (d)(3) of this section are included in the calculation of the borrower's monthly payment amount only if the borrower and the borrower's spouse elect to repay their eligible Direct Loans jointly under the ICR plan.

(f) *Monthly payment amounts.* (1) For the REPAYE plan, the borrower's monthly payments are—

(i) \$0 for the portion of the borrower's income, as determined under paragraph (e)(1) of this section, that is less than or equal to 225 percent of the applicable Federal poverty guideline; plus

(ii) 5 percent of the portion of income as determined under paragraph (e)(1) of this section that is greater than 225 percent of the applicable poverty guideline, prorated by the percentage that is the result of dividing the borrower's original total loan balance attributable to eligible loans received for undergraduate study by the borrower's original total loan balance attributable to all eligible loans, divided by 12; plus

(iii) 10 percent of the portion of income as determined under paragraph (e)(1) of this section that is greater than 225 percent of the applicable Federal poverty guidelines, prorated by the percentage that is the result of dividing the borrower's original total loan balance attributable to eligible loans received for graduate or professional study by the borrower's original total loan balance attributable to all eligible loans, divided by 12.

(2) For new borrowers under the IBR plan and for all borrowers on the PAYE plan, the borrower's monthly payments are the lesser of:

(i) 10 percent of the borrower's discretionary income, divided by 12; or

(ii) What the borrower would have paid on a 10-year standard repayment plan based on the eligible loan balances and interest rates on the loans at the time the borrower entered the IBR or PAYE plans.

(3) For those who are not new borrowers under the IBR plan, the borrower's monthly payments are the lesser of:

(i) 15 percent of the borrower's discretionary income, divided by 12; or

(ii) What the borrower would have paid on a 10-year standard repayment plan based on the eligible loan balances and interest rates on the loans at the time the borrower entered the IBR plan.

(4)(i) For the ICR plan, the borrower's monthly payments are the lesser of:

(A) What the borrower would have paid under a repayment plan with fixed monthly payments over a 12-year repayment period, based on the amount that the borrower owed when the borrower entered the ICR plan, multiplied by a percentage based on the borrower's income as established by the Secretary in a **Federal Register** notice published annually to account for inflation; or

(B) 20 percent of the borrower's discretionary income, divided by 12.

(ii)(A) Married borrowers may repay their loans jointly under the ICR plan. The outstanding balances on the loans of each borrower are added together to determine the borrowers' combined monthly payment amount under paragraph (f)(4)(i) of this section;

(B) The amount of the payment applied to each borrower's debt is the proportion of the payments that equals the same proportion as that borrower's debt to the total outstanding balance, except that the payment is credited toward outstanding interest on any loan before any payment is credited toward principal.

(g) *Adjustments to monthly payment amounts.* Monthly payment amounts calculated under paragraphs (f)(1) through (3) of this section will be adjusted in the following circumstances:

(1) In cases where the spouse's loan debt is included in accordance with paragraph (e)(2)(i) of this section, the borrower's payment is adjusted by—

(i) Dividing the outstanding principal and interest balance of the borrower's eligible loans by the couple's combined outstanding principal and interest balance on eligible loans; and

(ii) Multiplying the borrower's payment amount as calculated in accordance with paragraphs (f)(1) through (3) of this section by the percentage determined under paragraph (g)(1)(i) of this section.

(2) In cases where the borrower has outstanding eligible loans made under the FFEL Program, the borrower's calculated monthly payment amount, as determined in accordance with paragraphs (f)(1) through (3) of this section or, if applicable, the borrower's adjusted payment as determined in accordance with paragraph (g)(1) of this section is adjusted by—

(i) Dividing the outstanding principal and interest balance of the borrower's eligible loans that are Direct Loans by the borrower's total outstanding principal and interest balance on eligible loans; and

(ii) Multiplying the borrower's payment amount as calculated in accordance with paragraphs (f)(1) through (3) of this section or the

borrower's adjusted payment amount as determined in accordance with paragraph (g)(1) of this section by the percentage determined under paragraph (g)(2)(i) of this section.

(h) *Interest.* If a borrower's calculated monthly payment under an IDR plan is insufficient to pay the accrued interest on the borrower's loans, the Secretary charges the remaining accrued interest to the borrower in accordance with paragraphs (h)(1) through (3) of this section.

(1) Under the REPAYE plan, during all periods of repayment on all loans being repaid under the REPAYE plan, the Secretary does not charge the borrower's account any accrued interest that is not covered by the borrower's payment;

(2)(i) Under the IBR and PAYE plans, the Secretary does not charge the borrower's account with an amount equal to the amount of accrued interest on the borrower's Direct Subsidized Loans and Direct Subsidized Consolidation Loans that is not covered by the borrower's payment for the first three consecutive years of repayment under the plan, except as provided for the IBR and PAYE plans in paragraph (h)(2)(ii) of this section;

(ii) Under the IBR and PAYE plans, the 3-year period described in paragraph (h)(2)(i) of this section excludes any period during which the borrower receives an economic hardship deferment under § 685.204(g); and

(3) Under the ICR plan, the Secretary charges all accrued interest to the borrower.

(i) *Changing repayment plans.* A borrower who is repaying under an IDR plan may change at any time to any other repayment plan for which the borrower is eligible, except as otherwise provided in § 685.210(b).

(j) *Interest capitalization.* (1) Under the REPAYE, PAYE, and ICR plans, the Secretary capitalizes unpaid accrued interest in accordance with § 685.202(b).

(2) Under the IBR plan, the Secretary capitalizes unpaid accrued interest—

(i) In accordance with § 685.202(b);

(ii) When a borrower's payment is the amount described in paragraphs (f)(2)(ii) and (f)(3)(ii) of this section; and

(iii) When a borrower leaves the IBR plan.

(k) *Forgiveness timeline.* (1) In the case of a borrower repaying under the REPAYE plan who is repaying at least one loan received for graduate or professional study, or a Direct Consolidation Loan that repaid one or more loans received for graduate or professional study, a borrower repaying under the IBR plan who is not a new borrower, or a borrower repaying under

the ICR plan, the borrower receives forgiveness of the remaining balance of the borrower's loan after the borrower has satisfied 300 monthly payments or the equivalent in accordance with paragraph (k)(4) of this section over a period of at least 25 years;

(2) In the case of a borrower repaying under the REPAYE Plan who is repaying only loans received for undergraduate study, or a Direct Consolidation Loan that repaid only loans received for undergraduate study, a borrower repaying under the IBR plan who is a new borrower, or a borrower repaying under the PAYE plan, the borrower receives forgiveness of the remaining balance of the borrower's loans after the borrower has satisfied 240 monthly payments or the equivalent in accordance with paragraph (k)(4) of this section over a period of at least 20 years;

(3) Notwithstanding paragraphs (k)(1) and (k)(2) of this section, a borrower receives forgiveness if the borrower's total original principal balance on all loans that are being paid under the REPAYE plan was less than or equal to \$12,000, after the borrower has satisfied 120 monthly payments, plus an additional 12 monthly payments or the equivalent over a period of at least 1 year for every \$1,000 if the total original principal balance is above \$12,000.

(4) For all IDR plans, a borrower receives a month of credit toward forgiveness by—

(i) Making a payment under an IDR plan, including a payment of \$0, except that those periods of deferment or forbearance treated as a payment under (k)(4)(iv) of this section do not apply for forgiveness under paragraph (k)(3) of this section;

(ii) Making a payment under the 10-year standard repayment plan under § 685.208(b);

(iii) Making a payment under a repayment plan with payments that are as least as much as they would have been under the 10-year standard repayment plan under § 685.208(b), except that no more than 12 payments made under paragraph (l)(10)(iii) of this section may count toward forgiveness under the REPAYE plan;

(iv) Deferring or forbearing monthly payments under the following provisions:

(A) A cancer treatment deferment under section 455(f)(3) of the Act;

(B) A rehabilitation training program deferment under § 685.204(e);

(C) An unemployment deferment under § 685.204(f);

(D) An economic hardship deferment under § 685.204(g), which includes volunteer service in the Peace Corps as an economic hardship condition;

(E) A military service deferment under § 685.204(h);

(F) A post active-duty student deferment under § 685.204(i);

(G) A national service forbearance under § 685.205(a)(4);

(H) A national guard duty forbearance under § 685.205(a)(7);

(I) A Department of Defense Student Loan Repayment forbearance under § 685.205(a)(9); or

(J) An administrative forbearance under § 685.205(b)(8) or (9).

(v) (A) If a borrower consolidates one or more Direct Loans or FFEL program loans into a Direct Consolidation Loan, the payments the borrower made on the Direct Loans or FFEL program loans prior to consolidating and that met the criteria in paragraph (4) of this section, or in 34 CFR 682.209(a)(6)(vi) and which were based on a 10-year repayment period, or 34 CFR 682.215 will count as qualifying payments on the Direct Consolidation Loan.

(B) For borrowers whose Direct Consolidation Loan repaid loans with more than one period of qualifying payments, the borrower will receive credit for the number of months equal to the weighted average of qualifying payments made rounded up to the nearest whole month.

(vi) Making payments under paragraph (k)(6) of this section.

(5) For the IBR plan only, a payment made pursuant to paragraph (k)(4)(i) or (k)(4)(ii) of this section on a loan in default or amounts collected through Administrative Wage Garnishment or Federal Offset that are equivalent to the amount a borrower would owe under paragraph (k)(4)(ii) of this section also satisfy a monthly repayment obligation for the purposes of forgiveness under paragraph (k) of this section.

(6)(i) For any period in which a borrower was in a deferment or forbearance not listed in paragraph (k)(4)(iv) of this section, the borrower may obtain credit toward forgiveness as defined in paragraph (k) of this section for any months in which the borrower makes a payment equal to or greater than the amount the borrower would have been required to pay during that period on any IDR plan under this section, including a payment of \$0.

(ii) Upon request, the Secretary informs the borrower of the months for which the borrower can make payments if the borrower provides any additional information the Secretary requests to calculate a payment under an IDR plan under this section.

(l) *Application and annual recertification procedures.* (1) Unless a borrower has provided approval for the disclosure of applicable tax information

to enter an IDR plan, a borrower must complete an application for IDR on a form approved by the Secretary;

(2) As part of the process of completing a Direct Loan Master Promissory Note or a Direct Consolidation Loan Application and Promissory Note, the borrower may approve the disclosure of applicable tax information in accordance with sections 455(e)(8) and 493C(c)(2) of the Act;

(3) If a borrower does not provide approval for the disclosure of applicable tax information under sections 455(e)(8) and 493C(c)(2) of the Act when completing the application for an IDR plan, the borrower must provide documentation of the borrower's income and family size to the Secretary;

(4) If the Secretary has received approval for disclosure of applicable tax information, but cannot obtain the borrower's AGI and family size from the Internal Revenue Service, the borrower and, if applicable, the borrower's spouse, must provide documentation of income and family size to the Secretary;

(5) After the Secretary obtains sufficient information to calculate the borrower's monthly payment amount, the Secretary calculates the borrower's payment and establishes the 12-month period during which the borrower will be obligated to make a payment in that amount;

(6) The Secretary then sends to the borrower a repayment disclosure that—

(i) Specifies the borrower's calculated monthly payment amount;

(ii) Explains how the payment was calculated;

(iii) Informs the borrower of the terms and conditions of the borrower's selected repayment plan; and

(iv) Tells the borrower how to contact the Secretary if the calculated payment amount is not reflective of the borrower's current income or family size;

(7) If the borrower believes that the payment amount is not reflective of the borrower's current income or family size, the borrower may request that the Secretary recalculate the payment amount. The borrower must also submit alternative documentation of income or family size not based on tax information to account for circumstances such as a decrease in income since the borrower last filed a tax return, the borrower's separation from a spouse with whom the borrower had previously filed a joint tax return, the birth or impending birth of a child, or other comparable circumstances;

(8) If the borrower provides alternative documentation under paragraph (l)(7) of this section or if the Secretary obtains documentation from

the borrower or spouse under paragraph (l)(4) of this section, the Secretary grants forbearance under § 685.205(b)(9) to provide time for the Secretary to recalculate the borrower's monthly payment amount based on the documentation obtained from the borrower or spouse;

(9) Once the borrower has only three monthly payments remaining under the 12-month period specified in paragraph (l)(5) of this section, the Secretary follows the procedures in paragraphs (l)(4) through (l)(8) of this section.

(10) If the Secretary requires information from the borrower under paragraph (l)(4) of this section to recalculate the borrower's monthly repayment amount under paragraph (l)(9) of this section, and the borrower does not provide the necessary documentation to the Secretary by the time the last payment is due under the 12-month period specified under paragraph (l)(5) of this section—

(i) For the IBR and PAYE plans, the borrower's monthly payment amount is the amount determined under paragraph (f)(2)(ii) or (f)(3)(ii) of this section;

(ii) For the ICR plan, the borrower's monthly payment amount is the amount the borrower would have paid under a 10-year standard repayment plan based on the balances and interest on the loans being repaid under the ICR Plan when the borrower initially entered the ICR Plan; and

(iii) For the REPAYE plan, the Secretary removes the borrower from the REPAYE plan and places the borrower on an alternative repayment plan under which the borrower's required monthly payment is the amount the borrower would have paid on a 10-year standard repayment plan based on the current loan balances and interest rates on the loans at the time the borrower was removed from the REPAYE plan.

(11) At any point during the 12-month period specified under paragraph (l)(5) of this section, the borrower may request that the Secretary recalculate the borrower's payment earlier than would have otherwise been the case to account for a change in the borrower's circumstances, such as loss of income or employment or divorce. In such cases, the 12-month period specified under paragraph (l)(5) of this section is reset based on the borrower's new information.

(12) The Secretary tracks a borrower's progress toward eligibility for forgiveness under paragraph (k) of this section and forgives loans that meet the criteria under paragraph (k) of this section without the need for an

application or documentation from the borrower.

(m) *Automatic enrollment in an IDR plan.* The Secretary places a borrower on the IDR plan under this section that results in the lowest monthly payment based on the borrower's income and family size if—

(1) The borrower is otherwise eligible for the plan;

(2) The borrower has approved the disclosure of tax information under paragraph (l)(2) or (l)(3) of this section;

(3) The borrower is in repayment and has not made a scheduled payment on the loan for at least 75 days; and

(4) The Secretary determines that the borrower's payment under the IDR plan would be lower than the payment on the plan in which the borrower is enrolled.

■ 5. Section 685.210 is revised to read as follows:

**§ 685.210 Choice of repayment plan.**

(a) *Initial selection of a repayment plan.* (1) Before a Direct Loan enters into repayment, the Secretary provides the borrower with a description of the available repayment plans and requests that the borrower select one. A borrower may select a repayment plan before the loan enters repayment by notifying the Secretary of the borrower's selection in writing.

(2) If a borrower does not select a repayment plan, the Secretary designates the standard repayment plan described in § 685.208(b) or (c) for the borrower, as applicable.

(3) All Direct Loans obtained by one borrower must be repaid together under the same repayment plan, except that—

(i) A borrower of a Direct PLUS Loan or a Direct Consolidation Loan that is not eligible for repayment under an income-driven repayment plan may repay the Direct PLUS Loan or Direct Consolidation Loan separately from other Direct Loans obtained by the borrower; and

(ii) A borrower of a Direct PLUS Consolidation Loan that entered repayment before July 1, 2006, may repay the Direct PLUS Consolidation Loan separately from other Direct Loans obtained by that borrower.

(b) *Changing repayment plans.* (1) A borrower who has entered repayment may change to any other repayment plan for which the borrower is eligible at any time by notifying the Secretary. However, a borrower who is repaying a defaulted loan under the income-based repayment plan or who is repaying a Direct Consolidation Loan under an income-driven repayment plan in accordance with § 685.220(d)(1)(i)(A)(3) may not change to another repayment plan unless—

(i) The borrower was required to and did make a payment under the IBR plan or other income-driven repayment plan in each of the prior three months; or

(ii) The borrower was not required to make payments but made three reasonable and affordable payments in each of the prior three months; and

(iii) The borrower makes and the Secretary approves a request to change plans.

(2)(i) A borrower may not change to a repayment plan that would cause the borrower to have a remaining repayment period that is less than zero months, except that an eligible borrower may change to an income-driven repayment plan under § 685.209 at any time.

(ii) For the purposes of paragraph (b)(2)(i) of this section, the remaining repayment period is—

(A) For a fixed repayment plan under § 685.208 or an alternative repayment plan under § 685.221, the maximum repayment period for the repayment plan the borrower is seeking to enter, less the period of time since the loan has entered repayment, plus any periods of deferment and forbearance; and

(B) For an income-driven repayment plan under § 685.209, as determined under § 685.209(k).

■ 6. Section 685.211 is amended by:

■ a. Revising the heading of paragraph (a).

■ b. Revising paragraph (a)(1).

■ c. Revising paragraph (f)(3)(ii).

The revisions read as follows:

**§ 685.211 Miscellaneous repayment provisions.**

(a) *Payment application and prepayment.* (1)(i) Except as provided for the Income-Based Repayment plan in paragraph (a)(1)(ii) of this section, the Secretary applies any payment in the following order:

(A) Accrued charges and collection costs.

(B) Outstanding interest.

(C) Outstanding principal.

(ii) The Secretary applies any payment made under the Income-Based Repayment plan in the following order:

(A) Accrued interest.

(B) Collection costs.

(C) Late charges.

(D) Loan principal.

(f) \* \* \*

(3) \* \* \*

(ii) Family size as defined in § 685.209; and

\* \* \* \* \*

■ 7. Section 685.219, as proposed to be amended November 1, 2022 at 87 FR 66063, and effective July 1, 2023, is further amended by:

■ a. Revising paragraph (b)(i) of the definition of “Qualifying repayment plan”.

■ b. Revising paragraph (c)(2)(iii).

■ c. Revising paragraph (g)(6)(ii).

The revisions read as follows:

**§ 685.219 Public Service Loan Forgiveness Program (PSLF).**

\* \* \* \* \*

(b) \* \* \*

(*Qualifying repayment plan*) \* \* \*

(i) An income-driven repayment plan under § 685.209;

\* \* \* \* \*

(c) \* \* \*

(2) \* \* \*

(iii) For a borrower on an income-driven repayment plan under § 685.209, paying a lump sum or monthly payment amount that is equal to or greater than the full scheduled amount in advance of the borrower's scheduled payment due date for a period of months not to exceed the period from the Secretary's receipt of the payment until the borrower's next annual repayment plan recertification date under the qualifying repayment plan in which the borrower is enrolled;

\* \* \* \* \*

\* \* \* \* \*

(g) \* \* \*

(6) \* \* \*

(ii) Otherwise qualified for a \$0 payment on an income-driven repayment plans under § 685.209.

**§ 685.220 [Amended]**

■ 8. Section 685.220, in paragraph (h), is amended by adding “§ 685.209, and § 685.221,” after “§ 685.208,”.

■ 9. Section 685.221 is revised to read as follows:

**§ 685.221 Alternative repayment plan.**

(a) The Secretary may provide an alternative repayment plan for a borrower who demonstrates to the Secretary's satisfaction that the terms and conditions of the repayment plans specified in §§ 605.208 and 685.209 are not adequate to accommodate the borrower's exceptional circumstances.

(b) The Secretary may require a borrower to provide evidence of the borrower's exceptional circumstances before permitting the borrower to repay a loan under an alternative repayment plan.

(c) If the Secretary agrees to permit a borrower to repay a loan under an alternative repayment plan, the Secretary notifies the borrower in writing of the terms of the plan. After the borrower receives notification of the terms of the plan, the borrower may accept the plan or choose another repayment plan.

(d) A borrower must repay a loan under an alternative repayment plan within 30 years of the date the loan entered repayment, not including periods of deferment and forbearance.

■ 10. Section 685.222 is amended by revising paragraph (e)(2)(ii) to read as follows:

**§ 685.222 Borrower defenses and procedures for loans first disbursed on or after July 1, 2017, and before July 1, 2020, and procedures for loans first disbursed prior to July 1, 2017.**

\* \* \* \* \*

(e) \* \* \*  
(2) \* \* \*

(ii) Provides the borrower with information about the availability of the income-driven repayment plans under § 685.209;

\* \* \* \* \*

■ 11. Section 685.403, as proposed to be amended November 1, 2022 at 87 FR 66063, and effective July 1, 2023, is further amended by revising (d)(1) to read as follows:

**§ 685.403 Individual process for borrower defense.**

\* \* \* \* \*

(d) \* \* \*

(1) Provides the borrower with information about the availability of the income-driven repayment plans under § 685.209;

\* \* \* \* \*

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Federal Aviation Administration  
14 CFR Parts 5, 21, 91, et al.

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Safety Management Systems; Proposed Rule

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Parts 5, 21, 91, 119, 121, and 135**

[Docket No.: FAA–2021–0419; Notice No. 23–05]

RIN 2120–AL60

**Safety Management Systems**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** The FAA proposes to update and expand the requirements for safety management systems (SMS) and require certain certificate holders and commercial air tour operators to develop and implement an SMS. This proposed rule would extend the requirement for an SMS to all certificate holders operating under the rules for commuter and on-demand operations, commercial air tour operators, production certificate (PC) holders that are holders or licensees of a type certificate (TC) for the same product, and holders of a TC who license out that TC for production. The FAA also proposes this rule in part to address a Congressional mandate as well as recommendations from the National Transportation Safety Board (NTSB) and two Aviation Rulemaking Committees (ARCs). Additionally, the proposed rule would more closely align the United States with Annex 19 to the Convention on International Civil Aviation. This proposed rule is intended to improve aviation safety by requiring organizations to implement a proactive approach to managing safety.

**DATES:** Send comments on or before March 13, 2023.

**ADDRESSES:** Send comments identified by docket number FAA–2021–0419 using any of the following methods:

- *Federal eRulemaking Portal:* Go to [www.regulations.gov](http://www.regulations.gov) and follow the online instructions for sending your comments electronically.
- *Mail:* Send comments to Docket Operations, M–30; U.S. Department of Transportation (DOT), 1200 New Jersey Avenue SE, Room W12–140, West Building Ground Floor, Washington, DC 20590–0001.
- *Hand Delivery or Courier:* Take comments to Docket Operations in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

- *Fax:* Fax comments to Docket Operations at 202–493–2251.

*Privacy:* In accordance with 5 U.S.C. 553(c), DOT solicits comments from the public to better inform its rulemaking process. DOT posts these comments, without edit, including any personal information the commenter provides, to [www.regulations.gov](http://www.regulations.gov), as described in the system of records notice (DOT/ALL–14 FDMS), which can be reviewed at [www.dot.gov/privacy](http://www.dot.gov/privacy).

*Docket:* Background documents or comments received may be read at [www.regulations.gov](http://www.regulations.gov) at any time. Follow the online instructions for accessing the docket or go to the Docket Operations in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

**FOR FURTHER INFORMATION CONTACT:** For technical questions concerning this action, contact Scott Van Buren, Office of Accident Investigation and Prevention, AVP–4, Federal Aviation Administration, 800 Independence Avenue SW, Room 300 East, Washington, DC 20591, telephone (202) 494–8417; mail [Scott.VanBuren@faa.gov](mailto:Scott.VanBuren@faa.gov).

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**List of Abbreviations and Acronyms Frequently Used in This Document**

- AC—Advisory Circular  
 ACSAA—Aircraft Certification and Accountability Act  
 ANPRM—Advance Notice of Proposed Rulemaking  
 ARC—Aviation Rulemaking Committee  
 CBI—Confidential Business Information  
 CFR—Code of Federal Regulations  
 EASA—European Union Aviation Safety Agency  
 FAA—Federal Aviation Administration  
 FOIA—Freedom of Information Act  
 ICAO—International Civil Aviation Organization  
 IRFA—Initial Regulatory Flexibility Analysis  
 LOA—Letter of Authorization  
 NAICS—North American Industry Classification System  
 NPRM—Notice of Proposed Rulemaking  
 NTSB—National Transportation Safety Board  
 OMB—Office of Management and Budget  
 PC—Production Certificate  
 RFA—Regulatory Flexibility Act  
 RIA—Regulatory Impact Analysis  
 SBA—Small Business Administration  
 SMS—Safety Management System  
 TC—Type Certificate  
 U.S.C.—United States Code

**I. Executive Summary***A. Purpose of This NPRM*

A safety management system (SMS) provides an organization-wide approach to identifying safety hazards, assessing, and managing safety risk, and assuring the effectiveness of safety risk controls. An SMS provides a set of decision-making processes and procedures that can improve safety by assisting an organization in planning, organizing, directing, and controlling its aviation-related business activities. Currently, the SMS requirements of part 5 of Title 14 of the Code of Federal Regulations (CFR) apply only to air carriers certificated under part 119 and conducting operations in accordance with part 121 (part 121 operators). In this Notice of Proposed Rulemaking (NPRM), the Federal Aviation Administration (FAA) proposes to expand the applicability of the SMS requirements to include additional entities in an effort to enhance safety, respond to a Congressional mandate,



and more closely align the FAA's SMS requirements with International Civil Aviation Organization (ICAO) Annex 19.

Historically, the approach to aviation safety was based on the reactive analysis of past accidents and the introduction of corrective actions to prevent the recurrence of those events. An SMS, however, helps organizations to proactively identify potential hazards in the operating environment, analyze the risks of those hazards, and mitigate those risks to prevent an accident or incident. In 2015, the FAA promulgated 14 CFR part 5, which required part 121 operators to develop and implement SMS and set out the basic requirements for those systems. The FAA believes that the next step in improving aviation safety is to extend SMS requirements to additional organizations that play a critical role in the design, manufacturing, and operation of aircraft (*i.e.*, part 119 certificate holders operating under part 135, Letter of Authorization (LOA) holders operating commercial air tours under § 91.147, and certain certificate holders under part 21). These organizations are in the best position to prevent future incidents and accidents because they are closest to the hazards, and they know the most about their operations and products. An SMS provides a structured, repeatable, systematic approach to proactively identify hazards and manage safety risk. With implementation of an SMS, these organizations would be better able to develop and implement mitigations that are appropriate to their environment and operational structure. The FAA believes the implementation of SMS can be used to avoid or mitigate future accidents. Representative examples of accidents that the FAA believes could be avoided can be found in sections V.G. and VII.A of this proposal. This proposal is based on the recommendations of two previous Aviation Rulemaking Committees (ARCs),<sup>1</sup> the National Transportation Safety Board (NTSB),<sup>2</sup> and the Joint Authorities Technical Review of the Boeing 737 MAX Flight Control System.<sup>3</sup>

Further, the Aircraft Certification Safety and Accountability Act (Pub. L.

116–260, 134 Stat. 2309, hereafter referred to as ACSAA), enacted on December 27, 2020, mandated the application of SMS regulatory requirements to holders of both a Type Certificate (TC) and a Production Certificate (PC) issued under part 21.<sup>4</sup> ACSAA further mandated that the FAA include certain requirements in its implementing regulations. The FAA proposes amendments to part 5 in accordance with this legislation.

Lastly, requiring SMS for certain commercial operators, and design and manufacturers would more closely align the FAA's SMS requirements with ICAO Annex 19; therefore, this proposed rule would increase U.S. alignment with other civil aviation authorities that are also implementing SMS requirements in accordance with ICAO Standards and Recommended Practices.<sup>5</sup>

#### *B. Summary of the Proposed Rule*

An SMS requires four essential components—safety policy, safety risk management, safety assurance, and safety promotion. Additionally, an SMS requires that an organization document the system itself and maintain any records produced under that system. In this NPRM, the FAA proposes to expand the applicability of the SMS requirements to include additional entities, add new requirements to part 5, and amend existing regulations in parts 5, 21, 91, and 119. Several of these proposed amendments respond to the statutory mandate in ACSAA.

Specifically, the FAA proposes to expand the applicability of part 5 beyond part 121 operators to include part 135 operators, § 91.147 air tour operators, and certain certificate holders under part 21. These entities would receive the greatest safety benefits of an SMS as they are best situated to prevent future incidents and aviation accidents.

In response to the statutory requirements in ACSAA, the FAA proposes to add a requirement for each SMS to include a code of ethics that

<sup>4</sup> Section 102(a)(1) of ACSAA.

<sup>5</sup> Several major civil aviation authorities have established or are in the process of establishing SMS requirements for air operators, air traffic management, airports, and maintenance organizations, including the European Union Aviation Safety Agency (EASA), Brazil, Canada, Japan, New Zealand, and Australia. Fewer countries have design and manufacturing organizations and, therefore, they have not established SMS requirements for those entities. However, New Zealand, Japan, and EASA have established SMS requirements for design and manufacturing organizations.

applies to all employees and clarifies that safety is the highest priority. Consistent with ACSAA, the FAA also proposes to revise the existing requirement for a confidential employee reporting system by adding a provision to ensure that employees can report without concern of reprisal.

Additionally, the FAA proposes several amendments to part 5 that are intended to increase the effectiveness of SMS, including several new requirements. The FAA proposes to require organizations to develop a system description, which is a summary of aviation-related processes and activities and a description of interfacing persons that contribute to the safety of the organization's aviation-related products and services. The FAA proposes to add information that must be considered during the system analysis, which is conducted when a person applies safety risk management. Specifically, the FAA proposes to require persons to consider the interfaces of the system in conducting the system analysis. The FAA also proposes to require persons who identify hazards to notify interfacing persons who are best able to address or mitigate the hazard. To account for these new requirements, the FAA proposes conforming amendments to the SMS documentation and recordkeeping requirements to ensure organizations document the system description and retain all communications concerning the notification of hazards to interfacing persons. Furthermore, the FAA proposes several amendments to part 5, including a revision to the definition of “hazard” to ensure it encompasses aviation incidents as well as accidents, the relocation of the definitions to the beginning of the subpart to facilitate readability of part 5, and the removal of all references to the term “certificate holder” to conform to the new applicability proposed by the rule. The FAA also proposes amendments to certain regulations in parts 21, 91, and 119 to conform with, and enable the implementation of, the proposed requirements in part 5.

The following table summarizes the proposed provisions and provides the proposed section(s) of the Federal Aviation Regulations that contains the provisions.

Table 1 provides a summary of the major provisions of this proposed rule.

<sup>1</sup> The SMS ARCs are discussed in Section IV.A.

<sup>2</sup> NTSB recommendations are discussed in Section IV.B.

<sup>3</sup> Joint Authorities Technical Review (JATR), *Boeing 737 MAX Flight Control System: Observations, Findings, and Recommendations*, Washington, October 11, 2019.

TABLE 1—SUMMARY OF MAJOR PROVISIONS

Provision	Proposed 14 CFR § affected	Summary of proposed provision
Applicability of part 5	5.1, 21.55, 21.135, 21.147, 91.147, and 119.8.	Expand the applicability of part 5 (currently limited to part 121 operators) to make SMS requirements applicable to part 135 operators, §91.147 air tour operators, and certain holders of a TC <sup>6</sup> and PC issued under part 21 for the same product. <sup>7</sup>
Definition of “Hazard”	5.3 <sup>8</sup>	Revise the definition of “hazard” to also mean conditions or objects with the potential to cause or contribute to an incident.
General Requirements	5.5(b)	Add a new requirement to develop and maintain a system description that includes information about the aviation products or services provided by the person and a description of the interfacing persons that contribute to the safety of the person’s products or services.
Part 121 operators	5.7(a)	Require part 121 operators to revise their current SMS in accordance with the new requirements of part 5 and to submit revisions no later than 12 months after effective date of final rule.
Applicants seeking to operate under part 121.	5.7(b)	Require applicants seeking to operate under part 121 to develop and implement an SMS in accordance with part 5 and to submit a statement of compliance as part of the certification process.
Part 135 operators and §91.147 air tour operators.	5.9(a)	Require part 135 operators and §91.147 air tour operators to develop and implement an SMS in accordance with part 5 and to submit a statement of compliance no later than 24 months after the effective date of final rule.
Applicants seeking to operate under part 135 or §91.147.	5.9(b)	Require applicants seeking to operate under part 135 or §91.147 to develop and implement an SMS in accordance with part 5 and to submit a statement of compliance as part of the certification or LOA process.
Holders of PC and TC for the same product.	5.11	Require any person that holds a PC and TC <sup>9</sup> issued under part 21 for the same product to develop an SMS in accordance with part 5; to submit an implementation plan for FAA approval no later than December 27, 2024; and to implement the SMS no later than December 27, 2025.
TC holders applying for a PC for same product.	5.13	Require TC holders <sup>10</sup> who apply for a PC for the same product to develop an SMS in accordance with part 5, to submit an implementation plan for FAA approval during the certification process, and to implement the SMS no later than one year after obtaining FAA approval.
TC holders who have a licensing agreement to allow other persons to obtain a PC.	5.15(b)	Require TC holders, who have a licensing agreement to allow other persons to obtain a PC, to develop an SMS in accordance with part 5; to submit an implementation plan for FAA approval no later than December 27, 2024; and to implement the SMS no later than December 27, 2025.
TC holders who enter into a licensing agreement to allow other persons to obtain a PC.	5.15(c)	Require TC holders, who enter into a licensing agreement to allow other persons to obtain a PC, to develop an SMS in accordance with part 5, to submit an implementation plan for FAA approval when providing written licensing agreements to the FAA, and to implement the SMS no later than one year after obtaining FAA approval.
Implementation plans	5.17	Require implementation plans filed under §§ 5.11, 5.13, and 5.15 to include a description of how the person intends to comply with part 5, and for the person to make available, upon request, all necessary information and data that demonstrates that the SMS has been or will be implemented in accordance with the implementation plan.
Safety policy	5.21(a)(7)	Add a new requirement for the safety policy to include a code of ethics that is applicable to all employees, including management personnel and officers, which clarifies that safety is the organization’s highest priority.
System analysis and hazard identification.	5.53(b)(5)	Add a new requirement for the person conducting the system analysis to consider the interfaces of the system.
Safety performance monitoring and measurement.	5.71(a)(7)	Revise the requirement for a confidential employee reporting system by adding a provision to ensure that employees can report without concern of reprisal.
	5.71(c)	Add a new requirement for holders of both a TC and PC for the same product to submit a summary of the confidential employee reports to the FAA every 6 months.
Notification of hazards to interfacing persons.	5.94	Add a new section to: (1) require the person who identifies a hazard to notify the interfacing person who, to the best of their knowledge, could address the hazard or mitigate the risk; and (2) require procedures for reporting and receiving hazard information with interfacing persons.
SMS documentation	5.95(c)	Add a new requirement for SMS documentation to include the system description.
SMS records	5.97(d)	Add a new requirement for persons to retain records of all communications provided under new § 5.94 for a minimum of 24 consecutive calendar months.

C. Summary of Costs and Benefits

The FAA estimated quantified annualized costs of \$51.3 million using a 7 percent discount rate over a 5-year period of analysis. The costs represent

<sup>6</sup> As discussed in Section V.A.3 of the preamble, the FAA considers a licensee of a TC to be equivalent to a holder of a TC. For purposes of this table, each reference to “TC holder” or “holder of a TC” is intended to encompass “licensee of a TC.” Thus, part 5 would also apply to a person who holds a PC and is a licensee of a TC for the same product.

<sup>7</sup> Part 5 would also apply to applicants seeking to operate under part 135 or § 91.147, and to an applicant for a PC who is the holder or licensee of a TC for the same product.

<sup>8</sup> The definitions and general requirements currently exist in §§ 5.5 and 5.3, respectively. The FAA proposes to relocate the definitions to § 5.3 and the general requirements to § 5.5.

<sup>9</sup> See footnote 7.

<sup>10</sup> See footnote 7.

resources to develop and implement an SMS. Mitigation costs to reduce or eliminate any hazards identified by an SMS, which are yet to be identified and thus unknown, are not quantified in the analysis. The FAA evaluated benefits qualitatively. The benefits are the value that would result from avoided fatalities, injuries, aircraft damage, and investigation costs. Please see Section VII. for more information.

II. Authority for This Rulemaking

The FAA’s authority to issue rules on aviation safety is found in Title 49 of the United States Code (U.S.C.). Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency’s authority.

In 2010, Congress mandated that the FAA conduct rulemaking to require part 121 operators to implement an SMS in the Airline Safety and Federal Aviation Administration Extension Act of 2010 (Pub. L. 111–216, 124 Stat. 2366).<sup>11</sup>

Subsequently, Congress enacted section 102(a)(1) of the Aircraft Certification, Safety, and Accountability Act (Pub. L. 116–260; 134 Stat. 2309, hereafter referred to as ACSAA), on December 27, 2020. Section 102, titled “Safety Management Systems,” requires the FAA to initiate a rulemaking to require manufacturers that hold both a TC and a PC issued pursuant to 49 U.S.C. 44704 have an SMS consistent with Standards and Recommended Practices established by ICAO and contained in Annex 19 to the

<sup>11</sup> See Sec. 215(a).

Convention on International Civil Aviation (61 Stat. 1180), for such systems. Section 102 of ACSAA requires the implementing regulations to include a confidential employee reporting system through which employees can report hazards, issues, concerns, occurrences, and incidents, without concern for reprisal for reporting, and a code of ethics. This rulemaking proposes regulations in accordance with those requirements.

Additionally, given this clear Congressional support for SMS as a safety concept, the FAA is proposing to use its discretion under the following authorities to proactively extend SMS requirements to part 119 certificate holders authorized to operate under part 135 and LOA holders operating under § 91.147.

This rulemaking is promulgated under the authority described in 49 U.S.C. 106(f), which establishes the authority of the Administrator to promulgate regulations and rules. This rulemaking is also promulgated under 49 U.S.C. 44701(a)(5) (“The Administrator of the Federal Aviation Administration shall promote safe flight of civil aircraft in air commerce by prescribing regulations and minimum standards for other practices, methods, and procedure the Administrator finds necessary for safety in air commerce and national security”); 44701(a)(2)(A) (“The Administrator of the Federal Aviation Administration shall promote safe flight of civil aircraft in air commerce by prescribing regulations and minimum standards in the interest of safety for inspecting, servicing, and overhauling aircraft, aircraft engines, propellers, and appliances”); 44702(a) (“The Administrator of the Federal Aviation Administration may issue airman certificates, design organization certificates, type certificates, production certificates, airworthiness certificates, air carrier operating certificates, airport operating certificates, air agency certificates, and air navigation facility certificates”); and 44704(a)(1) (“The Administrator of the Federal Aviation Administration shall issue a type certificate for an aircraft, aircraft engine, or propeller, or for an appliance specified under paragraph (2)(A) of this subsection when the Administrator finds that the aircraft, aircraft engine, propeller, or appliance is properly designed and manufactured, performs properly, and meets the regulations and minimum standards”). Additionally, this rulemaking is consistent with the requirements of 49 U.S.C. 44701(d)(1)(A) (“When prescribing a regulation or standard under [49 U.S.C. chapter 447], the Administrator shall

consider the duty of an air carrier to provide service with the highest possible degree of safety in the public interest.”).

Finally, 49 U.S.C. 44701(c) directs the Administrator to “carry out this chapter in a way that best tends to reduce or eliminate the possibility or recurrence of accidents in air transportation.” This rulemaking is intended to require certain entities that are regulated under the foregoing statutory authorities to develop and maintain an SMS to improve the safety of their operations. The development and implementation of SMS may enhance safety in air transportation and design and manufacturing so that persons can proactively identify and mitigate safety hazards, thereby reducing the possibility or recurrence of accidents in air transportation consistent with the mandate in § 44701(c). For these reasons, the proposed regulations are within the scope of the FAA’s authority and are consistent with Congress’s mandate that the FAA exercise its authority to proactively—not just reactively—promote safe flight of civil aircraft and to reduce or eliminate hazards that could result in accidents in air transportation.

### III. Purpose of This Rulemaking

An SMS is a formal, top-down, organization-wide approach to managing safety risk and ensuring the effectiveness of safety risk controls. It includes systematic procedures, practices, and policies for the management of safety risk. An SMS is a management system integrated into an organization’s operations that enforces the concept that safety should be managed with as much emphasis, commitment, and focus as any other critical area of an organization.

The purpose of an SMS is to reduce incidents, accidents, and fatalities by aiding organizations in identifying hazards and mitigating those hazards before they lead to an incident or accident. Anecdotal evidence from SMS voluntary program participants indicates that SMS improves the safety of organizations.<sup>12</sup> Although the authors of a 2012 study by the Australian Transport Safety Board acknowledged the prevalence of earlier studies that were inconclusive, they ultimately

<sup>12</sup> As described in the Regulatory Impact Analysis for the rule, for example, one participant noted that the compressed executive awareness time of new safety related issues resulted in formal management actions occurring in less than 90 days for low-risk issues and within hours for high-risk issues. Another participant noted that they have seen a substantial drop in the major risk categories that they track.

concluded that “recent studies have demonstrated that well-implemented SMS, especially those where the organisation invests effort into the SMS, are associated with enhanced safety performance.”<sup>13</sup> Research by Tinsley, Dillon, and Madsen<sup>14</sup> suggests that the attention an SMS would bring to seemingly smaller events, or near accidents, could prevent catastrophes. Tinsley, Dillon, and Madsen studied near accidents in dozens of companies across industries and in laboratory simulations. They determined that multiple near accidents preceded and foreshadowed every disaster and business crisis they studied, and that most near accidents were ignored. The authors found that identifying near accidents and correcting root causes are good investments for an organization. Similarly, in examining large U.S. commercial airlines that operated from 1990 to 2007, Madsen, Dillon, and Tinsley<sup>15</sup> found that for airlines to continue to improve safety they must attend to the yet undiscovered or unrecognized risks in the system without waiting for an accident to bring attention to them. Additionally, the FAA contends that expanding the implementation of SMS in the aviation industry would increase overall safety for each entity using an SMS, as well as requiring communication across the aviation industry with respect to identified hazards.

The FAA previously forecasted a reduction in fatalities as a result of implementing SMS for part 121 certificate holders.<sup>16</sup> The FAA still expects an overall reduction in fatalities, however quantifying the effects of part 5 requirements on part 121 certificate holders cannot be done at this time due to inadequate data. The data available for 2020 and 2021 is both significantly reduced and atypical due to the COVID-19 pandemic.

Over the last few decades, accidents involving commercial aviation operators

<sup>13</sup> Thomas, Dr. Matthew J.W.; *A Systematic Review of the Effectiveness of Safety Management Systems*, Australian Transport Safety Bureau, 2012, p. 27. [https://www.atsb.gov.au/sites/default/files/media/4053559/xr2011002\\_final.pdf](https://www.atsb.gov.au/sites/default/files/media/4053559/xr2011002_final.pdf).

<sup>14</sup> Tinsley, Catherine H. et al., *How to Avoid Catastrophe*. Harvard Business Review, Brighton, 2011. <https://hbr.org/2011/04/how-to-avoid-catastrophe>.

<sup>15</sup> Madsen, Peter et al., *Airline Safety Improvement Through Experience with Near-Misses: A Cautionary Tale*. Risk Analysis, May 2016, Vol. 36, No. 5.

<sup>16</sup> See Section V (Regulatory Notices and Analysis) starting on page 1318 of 14 CFR part 5 final rule published January 8, 2015, 80 FR 1308.

have decreased.<sup>17</sup> Despite an overall reduction in accidents, the FAA has determined that many of the accidents involving part 135 and § 91.147 operators could have been effectively mitigated by the presence of an SMS. These accidents highlight the systemic improvement opportunities to safety as described in the Regulatory Impact Analysis (RIA) for this rulemaking. According to NTSB data, from 2015 to 2019, there were 215 accidents involving part 135 operators, with a total of 121 fatalities,<sup>18</sup> as well as 33 accidents involving air tour operators operating under § 91.147, with a total of 16 fatalities.<sup>19</sup> The FAA identified 35 of these accidents involving part 135 operators and four accidents involving § 91.147 operators which involved fatalities and serious injuries that could have been mitigated had those operators implemented an SMS. Additional accidents not involving fatalities or serious injuries may also have been avoided. The FAA also identified several accidents across parts 91, 121, and 135 involving design and production issues that resulted in fatalities and serious injuries that could have been mitigated or prevented if the design and manufacturing organizations involved had implemented an SMS.<sup>20</sup> A full listing of each accident used to inform the analysis of this rulemaking (including a brief description of the accident, a quantified estimate of the probability of mitigation through the adoption of SMS, and a rationale for estimated probability) is included in Appendix A to the RIA.

Given the rapid development, growth, and increasing complexities of the airspace, the FAA believes that SMS requirements should extend to parties that play a critical role in the design, manufacturing, and operation of aircraft. ACSAA requires the FAA to include holders of both a TC and a PC among those organizations that should be required to implement an SMS. Applying SMS to commuter and on-demand air carriers, air tours, and the manufacturers responsible for design and production of products would continue to reduce incidents, accidents,

and fatalities and improve safety in aviation by requiring these organizations to proactively identify hazards, assess risk of those hazards, and develop and implement mitigations, as necessary. The FAA anticipates that this systemic safety effort will have a measurable effect on the reduction in fatalities as described in the RIA for this rulemaking. ICAO, other civil aviation authorities, industry advisory groups, and the NTSB all agree that the use of an SMS improves safety. An SMS has been implemented by each part 121 operator, and many other organizations have implemented an SMS following the FAA's SMS Voluntary Program. The FAA has also implemented SMS within many of its own organizations. The FAA's own experience has shown that organizations that have an SMS may:

- Increase safety of products or services by identifying and addressing problems before they occur.
- Improve data-informed decision making to prioritize resource allocation.
- Enhance communication regarding safety by using common, consistent terminology within the organization and throughout the industry.
- Strengthen the organization's safety culture.

Further, expansion of the SMS requirements would increase U.S. alignment with other civil aviation authorities that are also implementing SMS requirements in accordance with ICAO Standards and Recommended Practices. With an SMS, a U.S. company would have an improved ability to operate internationally due to better alignment with ICAO standards and recommended practices. Furthermore, a U.S. company without an SMS could even be barred from doing business in a country where the civil aviation authority requires them to have an SMS.

To date, SMS requirements have mainly focused on internal identification and mitigation of risk within an organization. However, the FAA is proposing to augment these requirements to encourage a more collaborative approach in which persons required to have an SMS share hazard information with each other and work together to identify and address hazards and safety issues. To enable this more collaborative approach, this proposal includes requirements to share hazard information with other organizations, which are intended to ensure that relevant information is shared with the person in the best position to address the hazard. The expanded applicability and hazard information sharing among interfacing organizations would enable a network of organizations working collaboratively to

manage risk, thereby enhancing the safety benefits of SMS by assuring that hazards are communicated and mitigated effectively.

#### IV. Background

##### A. SMS Aviation Rulemaking Committees

The FAA chartered two ARCs composed of industry stakeholders to provide advice on implementing SMS in aviation regulations, including parts 21, 91, 121, 125, 135, 141, 142, and 145. The industry stakeholders on these ARCs included individual companies and associations representing operators, design and manufacturing organizations, repair stations, and training organizations. These ARCs expressed industry support for SMS and recommended that the FAA publish rules requiring use of SMS.

##### 1. SMS ARC (2009)

On February 12, 2009, the FAA chartered the SMS ARC with membership from across the aviation industry to evaluate the public comments submitted in response to an Advance Notice of Proposed Rulemaking (ANPRM) on potential rulemaking requiring certain part 21, 119, 121, 125, 135, 141, 142, and 145 certificate holders to develop an SMS<sup>21</sup> and provide its recommendations regarding further action the agency should consider in developing and implementing SMS requirements.<sup>22</sup>

In its report, the ARC recommended the FAA issue regulations on SMS and that those regulations apply to certificate holders under 14 CFR parts 21, 119, 121, 125, 135, 141, 142, and 145, as well as operators under 14 CFR part 91 subpart K. This broad applicability would more closely align with ICAO Standards and Recommended Practices. The ARC, however, recommended phased promulgation of SMS regulations and that the FAA prioritize new SMS regulations based on the potential safety benefit, as well as industry experience and regulatory oversight readiness. The FAA addressed these recommendations by first focusing on part 121 by promulgating 14 CFR part 5 on January 8, 2015 and proposing a rule to require airports certificated under part 139 to implement an SMS. Although the SMS requirements in part 5 currently apply only to part 121 operators, the FAA

<sup>21</sup> 74 FR 36414, July 23, 2009.

<sup>22</sup> Safety Management System (SMS) Aviation Rulemaking Committee; Order 1110.152, Washington, DC. Available at: [https://www.faa.gov/regulations\\_policies/rulemaking/committees/documents/media/SMSARC-2122009.pdf](https://www.faa.gov/regulations_policies/rulemaking/committees/documents/media/SMSARC-2122009.pdf) (as of March 15, 2022).

<sup>17</sup> U.S. Air Carrier Safety Data, <https://www.bts.gov/content/us-air-carrier-safety-data>. Accessed March 22, 2022.

<sup>18</sup> National Transportation Safety Board. U.S. Civil Aviation Accident Rates. 2022. Available at: <https://www.ntsb.gov/safety/Pages/research.aspx>.

<sup>19</sup> Data file of sightseeing accidents provided by the NTSB April 2020.

<sup>20</sup> These accidents include those identified by NTSB accident numbers: DCA19MA086, ERA18LA199, DCA18MA142, ERA18FA120, DCA17FA021, WPR16FA153, DCA16FA199, ERA16FA185, WPR16FA055, DCA16FA013, GEN15MA290, ERA15FA254, and DCA15FA073.

explained in that rulemaking that part 5 was designed for broader application and the FAA intended for the SMS requirements to apply to other FAA-regulated entities in the future.<sup>23</sup> The rulemakings implementing SMS for part 121 operators and airports certificated under part 139 are addressed in more detail in Section IV.C. of this NPRM preamble.

When considering this proposed rule, the FAA explored applying part 5 SMS requirements to additional certificate holders and operators consistent with the ARC recommendations, as well as any certificate holders and operators required by ICAO Standards and Recommended Practices in ICAO Annex 19 (*i.e.*, parts 21, 135, 141, 142, 145, and some operators under part 91).

However, in this proposed rule the FAA is choosing to address the most impactful parts to which ICAO Annex 19 is applicable (part 135 [operators], part 21 [design and manufacturing], and § 91.147 [air tours]).

The ARC also recommended that the FAA provide additional protections for SMS safety information and proprietary data. As discussed in more detail in Section V.H., the FAA has addressed data protection in this proposal.

The ARC recommended alignment with the SMS framework developed by ICAO in Annex 19, which would facilitate SMS requirement compatibility with States actively engaged in developing and adopting their own SMS requirements. The FAA designed part 5 consistent with this recommendation.

The ARC recommended that the FAA recognize existing systems and processes. For instance, some operators have systems for internal auditing, employee reporting, and revising manuals, which could be leveraged in the development of their SMS. The FAA is incorporating this recommendation in this proposed rule by encouraging certificate holders and LOA holders to leverage their existing systems and processes to meet the requirements. In addition, the FAA is proposing guidance material that describes how existing systems and processes may align with SMS requirements.

Further, the ARC expressed concern regarding the potential impact of SMS requirements on small businesses. The FAA addressed this concern. Just as existing part 5 requirements are performance-based and scalable, each revision proposed in this NPRM is also intended to be scalable. Scalability is

discussed further in Section V.F. of this NPRM preamble. In addition, the proposed guidance accompanying this NPRM should assist certificate holders in appropriately scaling the implementation of SMS to fit their operations. The guidance material is discussed further in Section VI. of this preamble.

## 2. Part 21 SMS ARC (2012)

The Part 21 SMS ARC, established on October 5, 2012,<sup>24</sup> evaluated improvements to the effectiveness and efficiency of existing “certification procedures for products and parts,” and the benefits of incorporating SMS in the design and manufacturing environment. The FAA received the ARC’s final report in October 2014.<sup>25</sup>

The ARC recommended establishing regulatory requirements for implementing SMS for design and production approval organizations that would be consistent with the part 5 requirements.<sup>26</sup> The ARC recommended that SMS requirements apply to organizations that design or manufacture products (under a TC or a PC) and to those that design or manufacture articles (under a technical standard order authorization or parts manufacturer approval), or that make changes to products (under a supplemental type certificate) that could directly prevent continued safe flight and landing if they fail.<sup>27</sup>

The FAA analyzed the ARC’s recommendation and developed an alternative (see Alternative 1 in Section VII.A.5.) to the current proposal that may have met the intent of the ARC’s recommendation by extending SMS requirements beyond holders of both a TC and a PC for the same product. This alternative would require SMS for design and production approval holders who design or produce products typically used for compensation or hire with some exceptions (described in Alternative 1 in Section VII.A.5.). As part of this alternative, the FAA

<sup>24</sup> 14 CFR 21/Safety Management Systems Aviation Rulemaking Committee Charter. Available at: [https://www.faa.gov/regulations\\_policies/rulemaking/committees/documents/media/Part21ARC-10052012.pdf](https://www.faa.gov/regulations_policies/rulemaking/committees/documents/media/Part21ARC-10052012.pdf) (visited March 15, 2022).

<sup>25</sup> Part 21/Safety Management Systems (SMS) Aviation Rulemaking Committee to the Federal Aviation Administration: Recommendations on Certification Procedures for Products and Parts. October 5, 2014.

<sup>26</sup> At the time the ARC submitted its final report in 2014, the FAA had not finalized the proposed part 5 requirements. Part 5 became effective March 9, 2015.

<sup>27</sup> Part 21/Safety Management Systems (SMS) Aviation Rulemaking Committee to the Federal Aviation Administration: Recommendations on Certification Procedures for Products and Parts, page 31. October 5, 2014.

considered permitting design and production approval holders to apply to be excluded from part 5 requirements if the failure of the article or product alteration would have little or no impact on the continued safe flight and landing of the aircraft. After analyzing the costs and benefits, the FAA determined that there were costs to including these design and production approval holders, but was unable to estimate the magnitude of benefits. The analysis of this alternative is provided in Section VII.A.5. As a result, the FAA is not proposing to adopt the full scope of the ARC’s recommendation in this NPRM at this time.

## B. National Transportation Safety Board Recommendations

The NTSB first recommended in 1997 that transportation organizations implement an SMS, and early recommendations were aimed at improving safety in the maritime industry. Since then, a number of NTSB investigations related to various modes of transportation, including aviation, have cited organizational factors contributing to accidents and have recommended SMS as a way to prevent future accidents and improve safety. The NTSB issued 18 recommendations regarding SMS for aviation organizations over a 15-year period, spanning 2007 through 2021.<sup>28</sup> These recommendations covered commercial operations under 14 CFR parts 121 and 135, revenue passenger carrying business operations under part 91, and certificate holders under part 21. Eight of the 18 NTSB recommendations were issued to the FAA.<sup>29</sup>

The NTSB regularly publishes a Most Wanted List, which “highlights transportation safety improvements needed now to prevent accidents, reduce injuries, and save lives.”<sup>30</sup> The NTSB 2021–2022 Most Wanted List recommended that the FAA, “Require and Verify the Effectiveness of Safety Management Systems in all Revenue

<sup>28</sup> NTSB Safety recommendations: A–07–010 (2007), A–09–016 (2009), A–09–089 (2009), A–09–098 (2009), A–09–106 (2009), A–12–062 (2012), A–12–063 (2012), A–14–105 (2014), A–14–106 (2014), A–16–036 (2016), A–19–028 (2020), A–19–036 (2019), A–19–038 (2019), A–20–025 (2020), A–21–007 (2021), A–21–013 (2021), A–21–014 (2021), and A–21–048 (2021).

<sup>29</sup> NTSB Safety recommendations: A–07–010 (2007), A–09–089 (2009), A–09–016 (2009), A–16–036 (2016), A–19–028 (2020), A–21–013 (2021), A–21–014 (2021), and A–21–048 (2021).

<sup>30</sup> 2021–2022 NTSB Most Wanted List of Transportation Safety Improvements, [www.ntsb.gov/mwl](http://www.ntsb.gov/mwl).

<sup>23</sup> NPRM, “Safety Management Systems for Part 121 Certificate Holders,” 75 FR 68224, 68232 (November 5, 2010).

Passenger-Carrying Aviation Operations.”<sup>31</sup>

### C. Safety Management System Rulemaking Efforts

#### 1. Safety Management Systems for Domestic, Flag, and Supplemental Operations

On July 23, 2009, the FAA published an ANPRM to solicit public comments on whether certain 14 CFR part 21, 119, 121, 125, 135, 141, 142, and 145 certificate holders, product manufacturers, applicants, and employers (product/service providers) should be required to develop an SMS.<sup>32</sup> Subsequently, on August 1, 2010, Congress enacted the Airline Safety and Federal Aviation Administration Extension Act of 2010 (Pub. L. 111–216, 124 Stat. 2366), which directed the FAA to conduct rulemaking to “require all part 121 air carriers to implement a safety management system.”<sup>33</sup> To meet the rulemaking deadlines mandated by the Act, the FAA decided not to immediately address SMS for other product/service providers.<sup>34</sup> The FAA limited the SMS rulemaking project to part 121 air carriers, issuing an NPRM on November 5, 2010,<sup>35</sup> and subsequently withdrawing the ANPRM.<sup>36</sup>

On January 8, 2015, the FAA published the Safety Management Systems for Domestic, Flag, and Supplemental Operations Certificate Holders final rule (SMS for part 121 final rule) requiring operators authorized to conduct operations under part 121 to develop and implement an SMS to improve the safety of their aviation related activities.<sup>37</sup> The final rule added part 5 to Title 14 of the CFR, creating the SMS requirements for part 121 certificate holders, modeled on the ICAO SMS framework in ICAO Annex 19 and consistent with the 2009 ARC recommendations. The requirements in part 5 were meant to be applicable to organizations of various sizes and complexities, as well as adaptable to fit the different types of organizations in

the air transportation system and operations within an individual company. The final rule also modified 14 CFR part 119 to specify applicability and implementation of the new SMS framework in part 5 for part 119 certificate holders authorized to conduct operations under part 121. Part 121 operators met the requirement to have an SMS acceptable to the FAA by 2018. The FAA has seen continuous improvement in 121 operators’ use of SMS to manage the safety of their operations and, therefore, is proposing to expand part 5 applicability with this rulemaking.

#### 2. Safety Management Systems for Part 139 Airports

On July 14, 2016, the FAA published the “Safety Management System for Certificated Airports” supplemental notice of proposed rulemaking [(81 FR 45872)] (Airports SMS SNPRM). The Airports SMS SNPRM proposed to require airports that meet certain criteria to develop and implement an SMS in the airport’s movement and non-movement areas. The FAA is working to finalize that rule.

### D. Aircraft Certification, Safety, and Accountability Act

The Lion Air and Ethiopian Airlines accidents involving the Boeing 737 MAX resulted in several investigations, not only of the accidents, but also of the FAA’s oversight and certification processes. One such investigation, convened by the FAA in April of 2019, was the Boeing 737 MAX Flight Control System Joint Authorities Technical Review. The Joint Authorities Technical Review included representatives from the National Aeronautics and Space Administration, the FAA, and several foreign civil aviation authorities. One of the Joint Authorities Technical Review recommendations was that the FAA encourage applicants to have a system safety function, such as a safety management system, that is independent from their design organization.<sup>38</sup>

Subsequently, on December 27, 2020, Congress enacted ACSAA, which set forth a variety of reforms intended to address certain safety standards relating to the aircraft certification process. Section 102 of ACSAA requires that the FAA promulgate rules to require holders of both a TC and a PC issued under 14 CFR part 21 to implement an SMS. ACSAA also establishes a timeline for those certificate holders to adopt an

SMS (*i.e.*, no later than four years after the date of enactment, December 27, 2024), and it establishes certain requirements for the rulemaking, including a confidential employee reporting system through which employees can report hazards, issues, concerns, occurrences, and incidents without concern for reprisal for reporting, and a code of ethics.

### E. International Movement Toward SMS

ICAO Annex 19, Safety Management, establishes a framework for member States to develop and implement SMS requirements within their State’s rules. Several member States, including the U.S., started developing and implementing SMS requirements within their countries after Annex 19 First Edition was published in July 2013 and became applicable in November 2013.<sup>39</sup> Annex 19 currently requires States to establish requirements for SMS for international commercial air transportation, design and manufacturing, maintenance, air traffic services, training organizations, and certified aerodromes, as well as SMS criteria for international general aviation operators of large or turbojet airplanes.

Member States continue to make progress in developing, implementing, and maintaining requirements for SMS that are aligned with ICAO’s SMS standards and recommended practices, including certificating authorities in Canada, Brazil, the United Kingdom, Japan, Australia, and Europe (European Union Aviation Safety Agency (EASA)). In the EASA regulatory framework, SMS is mandatory for certificated operators of airplanes and helicopters authorized to conduct commercial air transportation. Additionally, as a result of recent EASA rulemaking efforts, SMS will also be applicable for continuing airworthiness of an aircraft and its components. The EASA also adopted a rule for design and production organizations (part 21), which will become applicable on March 7, 2023.<sup>40</sup>

FAA also notes that other civil aviation authorities and interested parties are initiating evaluations to determine the effects of SMS post implementation. Two evaluations of note are discussed as follows.

In 2019 Transport Canada Civil Aviation published an evaluation of the impact of SMS on aviation safety 10 years after it was mandated for airline operators, private operators, approved

<sup>39</sup> The Second Edition of Annex 19 was published in July 2016 and became applicable in November 2019.

<sup>40</sup> European Union Aviation Safety Agency Commission Implementing Regulation (EU) 2022/203 of 14 February 2022.

<sup>31</sup> 2021–2022, NTSB Most Wanted List of Transportation Safety Improvements, Require and Verify the Effectiveness of Safety Management Systems in all Revenue Passenger-Carrying Aviation Operations, <https://www.ntsb.gov/Advocacy/mwl/Pages/mwl-21-22/mwl-as-01.aspx>.

<sup>32</sup> ANPRM, “Safety Management Systems,” 74 FR 36414, July 23, 2009.

<sup>33</sup> See Sec. 215(a).

<sup>34</sup> See “Safety Management System; Withdrawal,” 76 FR 14592, March 17, 2011.

<sup>35</sup> 75 FR 68224.

<sup>36</sup> See *id.*

<sup>37</sup> 80 FR 1308. The FAA published technical amendments on January 13, 2015 (80 FR 1584) and May 25, 2017 (82 FR 24009) to correct a date and a reference in the rule, respectively.

<sup>38</sup> Joint Authorities Technical Review (JATR), *Boeing 737 MAX Flight Control System: Observations, Findings, and Recommendations*, October 11, 2019.

maintenance organizations that service airline operator aircraft, air navigation services, and aerodromes/airports/heliports.<sup>41</sup> The evaluation findings were based on multiple lines of evidence, including a survey of nearly 1800 aviation industry stakeholders (operators, approved maintenance organizations, aerodromes), case studies involving eight enterprises and interviews. The evaluation found that many organizations have implemented policies and practices associated with an effective SMS, specifically, non-punitive reporting, executive commitment and hazard identification and mitigation. The evaluation found notable buy-in to SMS among those surveyed. Although accident trends declined over the 10-year evaluation period it was also noted that a lack of objective data limited ability to show safety improvement directly attributable to SMS because of the difficulty in separating other effects that may also benefit safety.

A Griffith University (Queensland Australia) doctoral thesis paper evaluated the impact of SMSs on safety performance for commercial aviation operations using two case studies.<sup>42</sup> Legislation in Australia for the implementation of an SMS for regular public transport Air Operator Certificate holders was mandated by the Civil Aviation Safety Authority in 2009 with phased implementation to be complete by 2011.

The first case study examined SMSs in the international general aviation and charter operation sector while the second case study reviewed SMSs in the Australian airline sector. In the first case study, researchers conducted an analysis of de-identified Flight Safety Foundation general aviation and charter sector audit findings. A total of 7,625 audit findings were reviewed from 2011–2014 from a population of 117 operators. The determination of safety performance was not possible for this sample population using a conventional accident rate metric due to the lack of availability of flight departure data. However, the study concluded that safety performance had improved since SMS implementation, showing a uniform decrease in the number of negative audit findings. Although the

study did not control for the number and thoroughness of audits performed during the years under study, the study did present qualitative findings by year and discipline, independent of the number of audits conducted. The study further concluded that a decrease in findings for the last two years of the study were likely due to the improvements brought about by growing and maturing safety management systems.<sup>43</sup>

In the second case study, researchers conducted a review of airline SMSs in Australia by comparison of Civil Aviation Safety Authority safety audit indicators for the sampled population before and after the implementation of SMS. The study concluded that the empirical evidence indicates that SMSs improve the safety performance of commercial aviation operations. The study also showed that SMS safety assurance plays the most critical role in an effective SMS; its associated subcomponents of continuous improvement, safety performance monitoring and measurement, and management of change have the highest net influence of all the SMS components. FAA notes that the Griffith University study conclusions and multiple correlation analyses are based on a short timeframe (three years of fully implemented SMS) and study of longer timeframes involving more mature SMSs is desirable.

## V. Discussion of the Proposal

The FAA proposes changes to part 5 to further the safety of flights for compensation or hire and passenger carrying operations. To that end, the FAA considers that overall aerospace system safety would be increased by requiring entities beyond part 121 operators to implement SMS, including other operators that fly for compensation or hire and the designers and manufacturers of products used in the system. The FAA envisions these safety management systems to be scalable to the size and complexity of the organization, and to not be unduly burdensome. By requiring entities that span the disparate sectors of aviation from manufacturing and design to operations to implement an SMS, the FAA seeks to create a network of organizations that speak the same language of safety management and can better communicate with one another and share information about any

hazards they identify during the course of their business. Although some part 121 operators may communicate with one another voluntarily at this time, the FAA considers that there would be greater safety benefit if all aviation organizations, from the manufacturer to the operator, were to communicate hazard information to one another. The FAA considers that the benefits of safety management systems are derived from each of the components of an SMS and that the proposed changes to part 5 would assist in maximizing the potential of an SMS to increase safety across the aerospace system.

### A. Applicability

Part 5 currently applies only to persons authorized to conduct operations under part 121. The FAA proposes to amend § 5.1 and expand the applicability of part 5 to: (1) any person authorized or applying to conduct operations under part 135 or § 91.147; (2) any person that holds or applies for a PC issued under part 21 for a product for which they are the TC holder or licensee; and (3) TC holders who license the TC for production.

Although the FAA recognizes the value of the variety of voluntary safety programs, their optional nature and lack of comprehensive application of all elements of part 5 may not yield as much safety benefit as a mandatory SMS that complies with all proposed requirements of part 5. Therefore, to ensure that the minimum standard is met, the FAA is proposing to broaden the application of part 5 SMS requirements.

#### 1. Part 135 Operators

As described in Section III, the FAA identified a number of accidents involving part 135 operators which resulted in fatalities and serious injuries that could have been mitigated through SMS. These accidents involved both passenger-carrying and cargo-only operations. Each of these accidents stemmed from different circumstances; however, the accidents analyzed were a representative cross section of the overall circumstances that were present in the balance of total part 135 accidents that occurred. Therefore, the FAA considers that an SMS would have been effective in similar accidents among those not analyzed.

The FAA proposes to require all part 119 certificate holders authorized to operate under part 135 and applicants for those certificates to develop and implement an SMS that meets the part 5 requirements. This aligns the proposed part 5 applicability with ICAO Annex 19 and with other civil aviation

<sup>41</sup> Evaluation of Safety Management Systems in Civil Aviation—Transport Canada, July 2019. Available at: <https://tc.canada.ca/sites/default/files/2021-02/evaluation-safety-management-systems-civil-aviation.pdf>.

<sup>42</sup> The Impact of Safety Management Systems on Safety Performance: Commercial Aviation Operations—Griffith University thesis paper. April 2015. Available at: <https://research-repository.griffith.edu.au/handle/10072/367145>.

<sup>43</sup> Yeun, Richard Chee Kin, *The Impact of Safety Management Systems on Safety Performance: Commercial Aviation Operations*, Ph.D. Thesis (Queensland Australia: Griffith University, 2015). See table 6.5, pp 122–123. <https://hdl.handle.net/10072/367145>.

authorities that generally do not differentiate between size and complexity of air carriers. SMS is necessary for safety of air transportation generally because anyone who engages in air transportation must understand the hazards associated with their operation, effectively assess the risks, and understand how to mitigate those risks. The identification of hazards through SMS may include analyzing the potential risk associated with crewmember fatigue when compounded by variations in individual 135 operations, such as scheduling variances, frequency of operations, distance, and number of pilots.<sup>44</sup>

The FAA considered excluding part 135 operators who use only one pilot-in-command in their operations from the SMS requirements. Approximately 31 percent (594) of the part 135 operators use one pilot-in-command. These operators have between 1 and 7 aircraft. Similar to most part 135 operators, these operators might also meet the size standard for small businesses (see Section VII.B for details). However, as all part 135 operators conduct air transportation of passengers and cargo, the FAA determined such exclusion would not be in the interest of safety as evidenced by the part 135 accidents discussed in Section III that could have been mitigated through an SMS (including those involving only one pilot-in-command).

As a fundamental matter, the flying public expects safe carriage from operators offering flight services for hire. Irrespective of whether an operator employs one pilot or a thousand, that company has the same responsibility to conduct safe operations. Part 135 operators employing just a single pilot are not immune to accident or serious injury; the FAA's review of NTSB reports from 2015 to 2020 showed that part 135 operators employing just a single pilot were involved in five accidents involving a fatality or serious injury. This record demonstrates that very small and single pilot part 135 operators continue to face insufficiently addressed safety hazards that cause the loss of life. More importantly, the FAA concluded that these operators could have used basic components of SMS, such as establishing safety policies, performing safety risk management to assess risk and develop controls, and using safety assurance to verify risk control effectiveness to address hazards

that contributed to these accidents. These SMS elements, which require the operator to proactively monitor its practices, procedures, and how it makes decisions, are especially important for small organizations. Small organizations by definition have fewer people and, as a result, have fewer opportunities for checks and balances on decisions that can affect safety. SMS addresses this by requiring small operators to create a structure for proactively monitoring their decision-making processes and addressing deficiencies. Very small operators may implement SMS requirements differently than larger operators. For example, with respect to § 5.93, small operators will have fewer employees to communicate with than large operators where personnel may have a more narrow set of responsibilities and less awareness of all operations. At one end of the spectrum, a one-person operator would have a system for documenting their own hazard information, actions, mitigations, safety performance, etc. for future reference. At the other end of the spectrum, a large organization would have a system capable of documenting and sharing information with larger groups of people. In particular, certain aspects of SMS such as developing more routine expectations for monitoring and responding to hazards may be particularly beneficial for smaller operators. The FAA requests comment regarding how SMS might present unique opportunities or challenges for smaller organizations.

The five accidents involving single-pilot part 135 operators between 2015 and 2020 resulted in 5 fatalities and 4 serious injuries.<sup>45</sup> Appendix A of the RIA describes how SMS could help avoid similar accidents in the future. The following discussion describes three of those accidents and identifies how having an SMS could have addressed the hazards contributing to the accidents. In each of these cases, if the operator had invested in an appropriately scaled SMS program on the front end, it could have avoided property damage, injury, and loss of life on the back end.

According to the NTSB, the probable cause of accident CEN18FA215 was the pilot's decision to fly over the river at a low altitude and his failure to maintain clearance with wires during low-level flight. The FAA examined the effect SMS would be expected to have on this accident and determined that SMS would have enabled the operator

to identify hazards along waterways. As a result of conducting safety risk management (§§ 5.51–5.55) the organization would develop a safety risk control that would help prevent the accident from occurring. Specifically, the risk control might have established a minimum altitude above known or presumed obstructions (§ 5.55(c)). The operator might have also established a policy or control that whenever the pilot is operating around wires, the pilot would mark the location of the wires on a map. This risk control would have helped to mitigate the risk of the pilot inadvertently flying into the wires because these additional controls would help to ensure the pilot's situational awareness regarding the location of the wires in relation to the aircraft. In this case, the pilot would monitor the safety performance (§ 5.71), by validating the location of the wires on the map and updating the information as appropriate. This is one way that the operator could verify that risk controls were appropriately applied and effective. In a small organization the operator could communicate (§ 5.93) the control to others in the organization face-to-face, via email, or other methods that the company regularly uses to communicate with its employees.

The probable cause of accident ANC18LA046 was the pilot's selection of an unsuitable takeoff area with unfavorable wind conditions, which resulted in the airplane's inability to maintain a climb. The FAA determined that the effect SMS would have had on this accident was similar to that of accident CEN18FA215. In this case, had the operator conducted safety risk management (§§ 5.51–5.55), it would likely have developed risk controls to ensure safer operations (§ 5.55(c)). For example, the operator could establish tools for a go/no-go decision customized for its operations. This could include special procedures specific to the environment or operations. Another risk control might be establishing procedures to ensure that the equipment is appropriate for the environment. Both of these controls would be documented using standard information tools already in use within the company. Conducting safety risk management could have included identifying and evaluating company approved unimproved landing areas to include ingress/egress routes and minimum acceptable weather performance limits could mitigate these hazards. In this case, safety performance monitoring (§ 5.71) might include periodic review of operations in non-standard environments to ensure that the controls provide the intended effect.

<sup>44</sup> See report from the Part 135 Pilot and Duty Rules Aviation Rulemaking Committee dated July 2, 2021, a copy of which has been placed in the docket for this rule.

<sup>45</sup> NTSB accident numbers: CEN18FA215, ANC18LA046, ANC16FA017, ANC17TA015, and CEN17FA100.



Similar to the previous example, the operator could communicate (§ 5.93) the control to others in the organization face-to-face, via email, or other methods that the company regularly uses to communicate with its employees.

The probable cause of accident ANC16FA017 was the pilot's inadvertent turn toward terrain that was higher-than-expected while trying to avoid poor visibility conditions and his subsequent attempt to clear terrain, which reduced the airspeed and led to the exceedance of the airplane's critical angle of attack and an aerodynamic stall and spin was the probable cause of accident. The FAA determined that SMS would have had an effect on this accident. In this case, with an SMS, the operator would have conducted safety risk management (§§ 5.51–5.55), and it would likely have identified hazards with low visibility hazards and mountainous terrain. The operator might develop safety risk controls regarding route suitability (§ 5.55(c)). These risk controls could include setting higher alternative weather minimums and selection of alternative routes that are consistent with the aircraft's performance, along with training to support these risk controls. The operator would also monitor its safety performance (§ 5.71), by validating that the higher alternative weather minimums and alternative routes are appropriate mitigations. Similar to other examples, the operator could communicate (§ 5.93) the control to others in the organization face-to-face, via email, or other methods that the company regularly uses to communicate with its employees.

In addition to addressing risk in this segment of the part 135 population, the FAA considers that a part 119 certificate holder authorized to operate under part 135 with only one pilot-in-command receives the same privileges and authorization as any other size or complexity part 119 certificate holder authorized to operate under part 135, and should therefore be subject to the same requirements with regard to SMS. The FAA recognizes that the implementation of part 5 requirements, applicable to all part 135 operators, must remain scalable to the size and complexity of the organization. (For more information regarding scalability, please refer to Section V.F.).

Some part 119 certificate holders may be authorized to operate under both parts 121 and 135. The proposal would extend the SMS requirements to operations conducted by those combination certificate holders authorized to operate under both parts 121 and 135. Certificate holders that

already have an SMS in place for only their part 121 operations would have to implement SMS for their part 135 operation.

## 2. Section 91.147 Letter of Authorization Holders

The FAA is proposing to extend the SMS requirements to all holders and applicants of LOAs issued under § 91.147 to enhance the safety of commercial air tour operations. Most operations for compensation or hire are conducted pursuant to a part 119 certification, however, nonstop commercial air tours operated under a § 91.147 LOA conduct operations for compensation or hire without a part 119 certificate. Because air tours operated under § 91.147 carry passengers for compensation or hire, the FAA is proposing to apply part 5 to these operations.

The FAA considered excluding some smaller § 91.147 LOA holders from this proposal (those conducting fewer than 100 flights per year). The FAA does not collect data on number of flights conducted under § 91.147 LOAs; however, approximately 54 percent (373) have only one aircraft registration. These LOA holders might also meet the size standard for small businesses, but the FAA does not have data to make this determination either (see Section VII.B for details). Consistent with the approach proposed for part 135 operators who use only one pilot-in-command in their operations, the FAA believes such an exception would not meet the safety objective.

FAA review of NTSB accident reports from 2015 to 2020 identified one accident involving a fatality or serious injury in the segment of § 91.147 LOA holders conducting fewer than 100 flights per year. As discussed in Section V.A.1, small operators bear the same responsibility for safety as large operators.

The § 91.147 LOA holder accident resulted in 5 fatalities involving an operator conducting air tours.<sup>46</sup>

The NTSB indicated that the probable cause of this accident was the operator's use of a passenger harness/tether system, which caught on and activated the floor-mounted engine fuel shutoff lever. As a result, the aircraft lost engine power in-flight and ditched into the East River. In addition, the operator allowed outside influence on company decisions. Moreover, they failed to address foreseeable safety risks associated with the harness/tether device.

<sup>46</sup> NTSB accident number: ERA18MA099.

If the operator had an SMS in place the company would have conducted safety risk management prior to installing the harness/tether device. While conducting safety risk management, the hazard of the harness/tether device potentially shutting off the fuel lever would have been identified under § 5.53(a) and analyzed under § 5.55(a). Based on that analysis, the company would assess the safety risk (§ 5.55(b)) and implement appropriate safety risk controls (§ 5.55(c)). After developing safety risk controls, the organization would communicate them to the appropriate flight crews and maintenance personnel (§ 5.93) face-to-face, via email, or other methods that the company regularly uses to communicate with its employees.

In addition, all § 91.147 LOA holders are authorized to provide the same service, regardless of their size. Improving aviation safety for all passenger-carrying operations conducted for compensation or hire would require all § 91.147 LOA holders to meet part 5 requirements for SMS, so long as the implementation of those requirements remains scalable to the size and complexity of the organization. (For more information regarding scalability, please refer to Section V.F.). As the requirements are scalable, so too will be compliance costs.<sup>47</sup> And, as evidenced by the accident discussed, there are safety benefits to be achieved from implementation of SMS even among these smaller operators.

The FAA is aware that there are § 91.147 LOA holders with low flight volume, as well as 135 operators who use only one pilot-in-command in their operations.<sup>48</sup> The FAA seeks supporting information and data regarding whether this applicability should be limited to a certain subset of § 91.147 LOA holders and part 135 operators, and if so, how?

## 3. Part 21 Certificate Holders

The FAA is proposing to require holders of both a TC and a PC issued for the same product under part 21 to develop and implement an SMS that complies with the part 5 requirements. Section 102(a)(1) of ACSAA requires the FAA to initiate a rulemaking proceeding to require that, “manufacturers that hold both a type certificate and a production certificate issued pursuant to section

<sup>47</sup> For example, in Section VII.B, Regulatory Flexibility Act, the FAA finds that the annual costs as a percentage of receipts for smaller operators with 1 to 9 aircraft is about 0.1% to 0.4% compared to those with a larger number of aircraft between 100 to 500 is about 0.2% to 0.3%.

<sup>48</sup> There are some § 91.147 LOA holders that conduct infrequent air tours even though that is not their primary business (e.g., flight schools, aerial applicators, or electronic news gathering, etc.).

44704 of title 49, United States Code, where the United States is the State of Design and State of Manufacture, have in place an SMS that is consistent with the standards and recommended practices established by ICAO.” As discussed in Section IV.E., Annex 19 requires ICAO member States to mandate SMS for the management of safety risk in design and production of aviation products. To meet the statutory requirement and align U.S. aviation design and manufacturing organizations with safety management practices followed by other international organizations complying with Annex 19, the FAA proposes to require holders of both a TC and a PC issued for the same product under part 21 to develop and implement an SMS that complies with the part 5 requirements.

Additionally, the FAA proposes to apply part 5 to: (1) persons who hold or are licensees of a TC and are seeking a PC for that same product, and (2) persons who hold a PC for a product for which the person is a licensee of the TC. This approach ensures that there are no gaps in SMS applicability for part 21 certificate holders because TC licensees have the same privileges as TC holders under § 21.45 and the same reporting requirements as TC holders under § 21.3 for failures, malfunctions, and defects. Therefore, in the context of an SMS, the FAA considers a licensee of a TC to be equivalent to a holder of a TC and should be required to comply with the requirements of this proposed rule.

Through ACSAA, Congress intended for SMS requirements to apply to entities that design and manufacture products. The FAA further recognizes that critical decisions are made during design and development that impact the safety of aviation products. Consequently, companies that design a product and allow other companies to produce that product should be held to the same regulatory requirements as a person holding both the TC and a PC for the same product. Upon evaluating section 102(a)(1) of ACSAA, the FAA determined that the implementing regulations combined with the regulatory framework of part 21 could enable certain persons to avoid the proposed requirements by licensing their TC to another person to obtain a PC.<sup>49</sup> To address this gap, the FAA

<sup>49</sup> Under §§ 21.47(a) and 21.55, a person who holds a TC for a product may enter into a written licensing agreement to allow another person to use that TC to obtain a PC. As a result, the person obtaining the PC would be allowed to use the TC holder's design approval to manufacture the product. Therefore, some business relationships result in one person holding the TC and a different person holding the PC for the same product.

proposes to apply part 5 to TC holders who license their TC to other persons in accordance with §§ 21.47 and 21.55.

The FAA notes that there may be persons who manufacture products under a TC in accordance with part 21 Subpart F. Section 21.123(g) requires these persons to obtain a PC within 6 months after the date of issuance of the TC. Therefore, these persons would be required to comply with the proposed rule because they have applied for a PC.

The FAA also notes that there may be persons who hold a PC for a supplemental type certificate. A supplemental type certificate is a design approval for a modification to a product. A person who holds a PC for a supplemental type certificate may produce articles used to modify the product but cannot produce a complete product. Under the proposed rule, part 5 would not apply to either a supplemental type certificate holder or a PC holder for a supplemental type certificate because these design and production approvals are for modifications to a product and not for complete products. Similarly, there are persons who may hold a TC and a PC that is designated for the production of parts or articles only. The proposed rule would not apply because the PC is only for the production of a part or an article and not for the same product.

The FAA considered applying part 5 to certain persons holding other design and production approvals such as technical standard order authorizations, parts manufacturer approvals, and supplemental type certificates, an approach that would be consistent with the Part 21 SMS ARC recommendation. Although there may be safety benefits to applying SMS to this larger population, the FAA could not substantiate these benefits. The FAA invites comments as to whether part 5 should apply to all holders of TCs, PCs, supplemental type certificates, technical standard order authorizations, or parts manufacturer approvals. The FAA requests that comments specify whether any exceptions should be made in the event that the FAA extends part 5 to these design and production approval holders and what those exceptions should entail. The FAA further requests information and data related to the safety benefits or impact of applying part 5 to additional design and production approval holders beyond the applicability in this proposed rule.

## B. General Requirements and Definitions

### 1. Definitions

The FAA is proposing to move the definitions in part 5 from current § 5.5 to proposed § 5.3 and to amend the definitions of “hazard” and “safety policy.” Currently, the definition of “hazard” in part 5 is “a condition that could foreseeably cause or contribute to an aircraft accident as defined in 49 CFR 830.2.” In Annex 19, ICAO defines “hazard” as “a condition or an object with the potential to cause or contribute to an aircraft incident or accident.”<sup>50</sup> The FAA is proposing to amend the definition of the term “hazard” to “a condition or an object with the potential to cause or contribute to an incident or aircraft accident, as defined in 49 CFR 830.2,” to further align with the internationally-recognized definition published by ICAO. Although the FAA previously did not include incidents in the definition of hazard,<sup>51</sup> the FAA now considers that the definition of hazard should include anything that affects or could affect the safety of aviation operations, not just those conditions or objects that could result in serious injury, death, or substantial damage. This is because many of the same circumstances that result in an incident could just as easily result in an accident. As discussed in Section III, Tinsley, Dillon, Madsen studied near accidents in dozens of companies across industries and in laboratory simulations. They determined that multiple near accidents preceded and foreshadowed every disaster and business crisis they studied, and that most near accidents were ignored. The authors found that “surfacing near misses and correcting root causes is one [of] the soundest investments that organizations can make.”<sup>52</sup> Therefore, the FAA is proposing to add to the definition of hazard, the term “incident” as defined in 49 CFR 830.2. The FAA believes that this proposed change would improve both international alignment and the identification of hazards. 49 CFR 830.2 defines “incident” as an occurrence other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operations. The FAA does not define a

<sup>50</sup> International Civil Aviation Organization, Annex 19 to the Convention on International Civil Aviation, Safety Management, Second Edition, pp. 1–2. July 2016.

<sup>51</sup> 80 FR 1308.

<sup>52</sup> Tinsley, Catherine H., Robin L. Dillon, and Peter M. Madsen. How to Avoid Catastrophe. Harvard Business Review. <https://hbr.org/2011/04/how-to-avoid-catastrophe>. 2011.

threshold or *de minimis* standard for what could affect aviation safety. The FAA believes that organizations are in the best position to determine what occurrences would have the ability to impact the safety of their products or services, and as a part of developing their SMS they may define thresholds for what might entail a reportable incident that could affect aviation safety.<sup>53</sup> They are also in the best position to determine the processes and tools they can use to communicate this information to their employees. Because safety risk management and safety assurance are ongoing and iterative processes, the organization will continually improve its ability to identify, communicate, and mitigate hazards, preventing them from resulting in incidents or accidents.

In addition, the FAA proposes two other modifications to the definition of “hazard” to more closely align with the ICAO definition: (1) while objects are a subset of the term “condition,” the FAA is proposing to add the term “object,” and (2) the FAA is proposing to change “foreseeably” to “the potential to.” These changes would align the definition more closely with the ICAO definition of “hazard”.

In addition, the FAA proposes to amend the definition of safety policy to change “certificate holder” to “person.” This proposed change would make the definition consistent with the revised applicability proposed by this rule, which includes persons who are not certificate holders (e.g., LOA holders).

## 2. Requirement To Develop and Implement SMS

As discussed previously, the FAA is proposing to move the General Requirements for SMS currently contained in § 5.3 to proposed § 5.5. For clarity, the FAA would reorganize proposed § 5.5 into three subparagraphs: (1) general requirements for the components of an SMS, (2) a new proposed requirement for a system description, and (3) the requirement to maintain an SMS in accordance with part 5. Additionally, the FAA is proposing to remove certain provisions from current § 5.3 as unnecessary.

The FAA proposes to add a requirement for all persons subject to part 5 to develop a system description. A system description is a summary of aviation-related processes and activities and a description of interfacing persons that contribute to the safety of the

aviation-related products and services provided. The FAA considers that organizations that receive the aviation-related products and services could contribute to the safety of those products and services and would, therefore, be identified among the interfacing persons.

A system description is important because organizations are often made up of a complex network of interactions involving different internal departments that also interface with external organizations that contribute to the safe operation of the organization. For an organization to have an effective SMS, it must fully understand its aviation-related business operations and activities that impact the management of aviation safety. Without that understanding, the SMS is unlikely to be clearly defined, adequately applied, or effectively executed. The use of an organization system description would also enable the organization to have a clear picture of its many interactions.

Although the focus of this regulation is on aviation, some organizations might also extend their SMS to their non-aviation related activities, such as security and occupational safety and health issues. If an organization elects to do so, the FAA would only conduct oversight of the SMS related to its aviation functions. The FAA is proposing to limit the application of SMS only to the aviation-related activities conducted by the organization under 14 CFR.

The FAA also proposes to add a provision in § 5.5(c) to make clear that the SMS requirements in part 5 are continuing requirements. For example, the requirements of part 5 do not cease to apply the moment a person develops and implements an SMS. Rather, a person must also maintain SMS in accordance with part 5. The new provision in proposed § 5.5(c) is not intended to impose a new requirement on the regulated community; it is intended only to clarify the existing requirements.

Furthermore, to remove unnecessary rule text, the FAA proposes to remove the provisions that are currently contained in § 5.3(b) and (c). Section 5.3(b), which requires the SMS to be maintained in accordance with the recordkeeping requirements of Subpart F of part 5, is unnecessary because the recordkeeping requirements of Subpart F apply irrespective of this provision. Additionally, § 5.3(c), which requires compliance with the relevant regulatory requirements of 14 CFR, is unnecessary because persons must comply with applicable regulatory requirements in 14 CFR irrespective of whether the FAA

expressly requires compliance in § 5.3(c).

The FAA also proposes to remove two requirements from current § 5.3(a). First, the FAA proposes to remove the requirement for the SMS to be submitted to the Administrator for acceptance. The proposal to expand the applicability of part 5 has resulted in the FAA proposing new regulations to address the additional entities that would be covered by part 5, namely §§ 5.7, 5.9, 5.11, 5.13, and 5.15. These proposed regulations would set forth the requirements for each regulated entity, including which documents the entity must submit to the Administrator for acceptance or approval. Second, the FAA proposes to remove the requirement for an SMS to be appropriate to the size, scope, and complexity of the organization’s operation. The FAA has determined that this provision is unnecessary because the FAA’s SMS requirements are performance-based and scalable. As such, persons that are required to develop an SMS under part 5 may scale their SMS to the size and complexity of their organizations. The FAA does not need to expressly require scalability in the regulations when the performance-based requirements are designed for that purpose.

## C. Components of Safety Management Systems

An SMS is composed of four major components: (1) safety policy, (2) safety risk management, (3) safety assurance, and (4) safety promotion. Additionally, an SMS requires documentation and recordkeeping. Currently, part 5 contains a subpart for each major component and a subpart for documentation and recordkeeping. The proposed rule would retain these subparts but includes proposed amendments to each one.

### 1. Safety Policy (Subpart B)

Safety policy is the foundation for an SMS and must be documented and communicated throughout the organization. All organizations must define policies, processes, procedures, and organizational structures to accomplish their safety objectives and goals. A documented safety policy ensures that all employees of the organization are aware of management’s commitment to achieving the organization’s safety objectives and are aware of their own role in meeting the safety objectives.

<sup>53</sup> For additional discussion on hazard information sharing, please see section V.C.4.b. (Safety Promotion (Subpart E), Proposed amendments to subpart E).

a. Summary of Current Requirements in Subpart B

Subpart B of part 5 sets forth the requirements for the organization's safety policy. The safety policy component of SMS includes safety policy documentation, identification accountability and authority in regard to safety, designation and responsibilities of safety management personnel, and emergency response planning. Section 5.21 currently requires a documented safety policy that: (1) establishes the organization's safety objectives, (2) includes a commitment to fulfill those safety objectives, (3) contains a statement concerning the necessary resources for implementation of the SMS, (4) contains a safety reporting policy, (5) defines unacceptable behavior and conditions for disciplinary action, and (6) establishes an emergency response plan for transitioning from normal to emergency operations.

b. Proposed Amendments to Subpart B

The FAA is proposing to add a requirement to § 5.21(a) that would require the safety policy to include a code of ethics that applies to all employees, including management personnel and officers. The code of ethics would clarify that safety is the organization's highest priority. This proposed requirement responds to section 102(f) of ACSAA, which mandates that "the regulations issued under subsection (a) shall require a safety management system to include establishment of a code of ethics applicable to all appropriate employees of a certificate holder, including officers (as determined by the FAA), which confirms that safety is the organization's highest priority." The FAA agrees that a code of ethics is beneficial to overall safety; therefore, this proposal would fulfill that legislative mandate and extend the requirement to all persons required to have an SMS.

The FAA acknowledges that section 102(f) of ACSAA only requires the FAA to apply the code of ethics requirement to certain part 21 certificate holders. However, to the greatest extent possible, the FAA seeks consistency in the SMS requirements. Furthermore, the FAA believes having a code of ethics, applicable to all employees of the organization, would influence the safety culture of the organization. If employees see their management engaged with safety as the highest priority, then that same safety attitude would likely prevail throughout the entire organization. Therefore, all persons required to have an SMS would benefit from having a code of ethics that

confirms that safety is the organization's highest priority. For that reason, the FAA is proposing to apply this requirement to all persons who would be required to have a part 5-compliant SMS.

Additionally, the FAA proposes minor amendments to subpart B (§§ 5.21 through 5.27) to reflect the new applicability requirements of the proposed rule. Currently, these regulations use the term "certificate holder" because part 5 applies to part 119 certificate holders authorized to conduct operations under part 121. The FAA proposes to remove all references to "certificate holder." Instead, the proposed rule refers to "person" to reflect the new applicability set forth in proposed § 5.1. Additionally, the FAA proposes to amend the current requirements of § 5.25 that refer only to "certificate(s)" by adding a reference to "Letter(s) of Authorization." This would ensure that the requirements of § 5.25 pertaining to the accountable executive apply to § 91.147 LOA holders.

2. Safety Risk Management (Subpart C)

Another core component of an SMS is safety risk management. A comprehensive SMS using safety risk management includes identifying hazards, assessing risk, and developing risk controls to reduce or eliminate risk associated with those hazards. Safety risk management allows an organization to focus on the areas of greatest risk from a safety perspective, taking into account system complexity and scope of the operations, and allows the organization to implement appropriate risk controls.

Organizations must apply safety risk management when implementing new or revising existing systems, developing operational procedures, and to address hazards or ineffective controls identified through safety assurance processes. For example, an organization would initiate safety risk management after learning that certain de-icing operations are not effective and use safety risk management to analyze the de-icing operations.<sup>54</sup> Safety risk management

<sup>54</sup> There are existing regulations that prohibit a takeoff when frost, ice, or snow (contamination) is adhering to the wings, control surfaces, rotors or propellers of an aircraft and some operations require a de-icing program [§§ 91.527, 121.629, and 135.227]. However, this example describes how operators can use SMS to focus on certain de-icing operations that may not be performing adequately and use a structured process to correct performance deficiencies or identify design changes (additional controls) using the SRM process. Current regulations prohibit takeoff when certain conditions are met, but there are no requirements for the company to look more broadly at the system and determine if or when there is a systemic issue with de-icing.

includes the following: (1) system analysis, (2) identifying hazards associated with the system, (3) analyzing the risk associated with the hazards, (4) assessing risk associated with the hazards to determine acceptable safety risk, and (5) controlling the risk of identified hazards when necessary.

The system analysis serves as the initial source for hazard identification when new systems are designed, when systems are revised, and when new operational procedures are developed. The system analysis also serves as a basis for describing and organizing information for risk analysis when potential hazards or ineffective risk controls are discovered in the safety assurance process. The system analysis processes ensure that information regarding the function and purpose of the system; the system's operating environment; outline of the system's processes and procedures; and the personnel, equipment, and facilities that the system requires for operation are analyzed so that hazards may be appropriately identified.

Next, an organization must use established processes to identify hazards within the context of the system analysis. Any hazards that are identified must be analyzed to the extent necessary to determine possible outcomes associated with each hazard.

The organization must then analyze the outcomes to determine the severity and likelihood (*i.e.*, risk) associated with the outcomes.<sup>55</sup> Subsequently, the organization must assess the safety risk, which requires the certificate holder to determine whether the safety risk is acceptable or mitigation is required.

Finally, the organization would develop and implement risk controls where necessary. Risk controls may mitigate the outcomes by reducing the likelihood or severity of the outcome or eliminating hazards by design. After these controls are developed, but before being implemented, the organization must assess whether the controls are likely to be effective and would not introduce any new hazards. When the

<sup>55</sup> As discussed in examples later in the preamble, this analysis may be either qualitative or quantitative depending on the size of the organization, the nature of the safety issue being addressed, and availability of relevant data, among other factors. SRM, as with all components of the SMS, should be scaled to fit the organization. Since each safety issue is unique and each SMS is developed to fit the organization, the FAA cannot make general estimates or judgments regarding the amount of time or documentation an organization would need for any given identified hazard. Consistent with the intent to scale this rule to the organization and the issue, the FAA would look to the organization to make that determination on a case-by-case basis.

risk controls are assessed and determined to be acceptable, the organization would implement them. Those controls would then be continuously monitored under the processes developed under subpart D, Safety Assurance, to ensure they are effective.

#### a. Summary of Current Requirements in Subpart C

Subpart C of part 5 currently contains the safety risk management requirements for an SMS. Section 5.51 establishes when a certificate holder would need to apply safety risk management processes and procedures to systems to identify the hazards and assess the risk associated with the systems. Once a certificate holder determines that the processes of safety risk management have been triggered under § 5.51, it must conduct a system analysis, as required by § 5.53. Section 5.53 provides information that must be considered when conducting a system analysis and identifying hazards. Currently, when conducting a system analysis, the following must be considered: (1) function and purpose of the system, (2) the system's operating environment, (3) an outline of the system's processes and procedures, and (4) the personnel, equipment, and facilities necessary for operation of the system. Section 5.55 establishes the requirements for safety risk assessment and controls.

#### b. Proposed Amendments to Subpart C

The FAA is proposing several changes to subpart C. First, as in the other subparts, the FAA is proposing to amend § 5.51 and § 5.55 by removing the term "certificate holder" to reflect the broadened applicability of the proposed rule. Instead, these sections will refer to "any person required to have an SMS under this subpart."

Additionally, the FAA is proposing to add a new requirement, § 5.53(b)(5), which would add the interfaces of the system to the list of items that must be considered when conducting a system analysis in accordance with § 5.53. Interfaces are a point where two or more operations, systems, subjects, or organizations connect and interact. Interfaces can be internal (*e.g.*, between functional groups in an organization, between hardware/software components of the system being analyzed, or between processes in the system being analyzed), or they can be external (*e.g.*, between organizations, between the system being analyzed and other systems, or between a human using the system and the system itself). The FAA is proposing to include the interfaces of

the system in the list of considerations required when performing the system analysis in § 5.53 because hazards can exist with interfacing organizations, processes, or systems in the way the two interfacing parts interact with each other. Understanding the interfaces while conducting a system analysis is important because the system analysis serves as the basis for identifying and analyzing hazards and their associated risk. This addition would further improve the ability of part 121 operators to analyze risk. As the aviation system becomes more complex, dynamic, and integrated, understanding these interfaces can assist in the identification of related hazards and improve safety overall. An SMS that looks both inward and outward is more effective at identifying hazards, a core function of any operational SMS. The FAA emphasizes that under this proposed requirement interfaces would be considered only to the extent that they affect aviation safety. For example, the interface between a part 21 aircraft manufacturer's engineering and payroll departments would not be considered when conducting a systems analysis under § 5.53 because this interface would not impact the aviation safety of the aircraft design. Additionally, the use of fall-arrestors in operator maintenance facilities to protect individuals working on aircraft would not be considered when conducting a system analysis in § 5.53 either because the interface is an occupational safety and health concern and does not directly affect the quality of work performed on the aircraft.

#### 3. Safety Assurance (Subpart D)

Safety assurance verifies that the risk controls put into place under safety risk management continue to be effective in managing risk and that the organization's safety performance is meeting or exceeding its safety objectives. Safety assurance has three elements: (1) safety performance monitoring and measurement; (2) safety performance assessment; and (3) continuous improvement.

Safety performance monitoring and measurement requires the development and maintenance of processes and systems that monitor operational processes and collect data on the performance of the organization. Within an organization, there are processes to collect data, such as those to meet regulatory requirements or voluntary reporting programs. In addition, there are external data sources, such as FAA systems or information from other organizations. Safety assurance processes must also include investigations of accidents and

incidents. Employee reporting systems provide another source of information regarding the performance of the organization.

The safety performance assessment is used to assess the organization's performance against its safety objectives. The safety performance assessment includes verifying the organization's compliance with established safety risk controls. In addition, the safety performance assessment identifies changes in operational environments, potential new hazards, and ineffective controls. If the assessment reveals new hazards or ineffective controls, the organization must initiate safety risk management processes. The accountable executive designated in accordance with § 5.25 must review information from the safety performance assessment on a regular basis.

Finally, safety assurance requires continuous improvement. The analysis and assessment functions of safety assurance are essential in alerting the organization to significant changes in the operating environment, possibly indicating a need for system change to maintain effective risk controls. As a result, an organization with an SMS must take steps to correct any safety performance deficiencies identified in the assessments.

#### a. Summary of Current Requirements in Subpart D

Safety assurance requirements for an SMS are established in subpart D of part 5. Section 5.71 covers safety performance monitoring and measurement, § 5.73 covers safety performance assessment, and § 5.75 covers requirements for continuous improvement. Pursuant to § 5.71(a), a person must develop and maintain processes and systems to acquire data with respect to its operations, products, and services to monitor the safety performance of the organization. Section 5.71(a) prescribes specific data that must be monitored, audited, evaluated, and investigated. Among these requirements, § 5.71(a)(7) requires the processes and systems to include a confidential employee reporting system in which employees can report hazards, issues, occurrences, and incidents, as well as a means to propose solutions and safety improvements. Once an organization with an SMS collects data through its safety monitoring and measurement processes, it must use the processes developed under § 5.71(b) to analyze the data.

Specifically, § 5.73 requires the organization to conduct assessments of its safety performance against its safety

objectives contained in its safety policy, which include reviews by the accountable executive to: (1) ensure compliance with safety risk controls, (2) evaluate the performance of the SMS, (3) evaluate the effectiveness of safety risk controls, (4) identify changes in the environment that may introduce new hazards, and (5) identify new hazards. This analysis is used to transform raw data into usable information that can support informed decision-making related to safety.

Finally, § 5.75 requires the organization to establish and implement processes to correct any safety performance deficiencies that are identified in the safety performance assessment, which ensures continuous improvement of the organization's safety performance.

#### b. Proposed Amendments to Subpart D

The FAA is proposing to remove the word "operations" from § 5.71(a) to clarify the requirement and avoid confusion with the term "operator." In addition, the FAA is proposing to amend §§ 5.71–5.75 by replacing "certificate holder" with "person" or "a person required to have an SMS under this subpart" to reflect the proposed broadened applicability of the rule.

The FAA is also proposing to add the text, "without concern of reprisal for reporting" to the confidential employee reporting system requirement in current § 5.71(a)(7) to meet section 102(e) of ACSAA which mandates that the proposed regulation:

[R]equire a safety management system to include a confidential employee reporting system through which employees can report hazards, issues, concerns, occurrences, and incidents. A reporting system under this subsection shall include provisions for reporting, without concern for reprisal for reporting, of such items by employees in a manner consistent with confidential employee reporting systems administered by the Administrator.

Further, section 102 mandates that regulations required by the statute shall also require holders of both a TC and a PC to submit a summary of confidential employee reports received in accordance with section 102 to the Administrator at least twice per year. Therefore, the FAA is proposing to add a new § 5.71(c), which would require holders of both a TC and a PC for the same product to submit a summary of the confidential employee reports received under § 5.71(a)(7) to the FAA once every six months.

The FAA recognizes that its proposed rule language, which would require holders of both a TC and a PC for the

same product to submit a summary of the confidential employee reports received under § 5.71(a)(7) to the FAA once every 6 months, slightly differs from the statutory language. Section 102(e) of ACSAA requires the summary of reports to be submitted at least "twice a year." As the statute does not require a particular interval for submission of the "twice a year" reports, the FAA finds it reasonable to require the reports every six months as it would preclude a person from submitting the same summary of reports twice in the same month and provide the FAA with an opportunity to assess reports received throughout the year. Accordingly, the FAA proposes to require the submission of these reports once every 6 months.

Although the ACSAA mandate was specific to part 21 certificate holders with both a TC and a PC, employees of all persons required to comply with part 5 should be protected from reprisal if they report hazards, issues, concerns, occurrences, or incidents. Further, the intent of the confidential system would be to provide some protection to employees, so they are able to report issues without concern of reprisal. Therefore, the FAA is proposing to apply the revision to the employee reporting system requirements in § 5.71(a)(7) to all persons required to comply with part 5. The FAA notes that this protection extends to the reporting of hazards, issues, concerns, occurrences, or incidents. If the individual reporting is responsible for creation of the hazard due to intentional actions or gross negligence, this provision would not protect them from employment actions based on the underlying offense.

However, the FAA is proposing in § 5.71(c) to require only holders of both a TC and a PC for the same product to submit a summary of the confidential employee reports to the FAA. This proposed requirement is targeted at part 21 certificate holders as this additional agency oversight is consistent with ACSAA. Summaries of confidential employee reports submitted by certificate holders with both a TC and a PC are protected from public disclosure by 49 U.S.C. 44735(a)(2), if the summaries are requested pursuant to the Freedom of Information Act (FOIA). The FAA is not proposing to extend this requirement to all persons required to have an SMS because the information would not be protected under 49 U.S.C. 44735(a)(2) for persons that are not covered by the ACSAA requirement.

#### 4. Safety Promotion (Subpart E)

Safety promotion requires communication to promote safety

practices. Safety promotion also requires that employees within an organization attain and maintain the competencies necessary to perform the duties relevant to the operation and performance of the SMS. Training to maintain the SMS may vary depending upon the position and responsibilities of the employee and may range from formal classroom training to simple notices to employees. In addition to training, an organization ensures that employees are aware of the SMS policies, processes, and tools that are relevant to their responsibilities.

#### a. Summary of Current Requirements in Subpart E

The requirements for safety promotion are established in subpart E of part 5. Section 5.91 requires training for the employees of the organization to ensure they attain and maintain the competencies necessary to perform their duties relevant to the operation and performance of the SMS. Section 5.93 requires the organization to develop and maintain a means of communicating safety information that: (1) ensures employees are aware of the SMS policies, processes, and tools that are relevant to their responsibilities; (2) conveys hazard information relevant to the employee's responsibilities; (3) explains why safety actions have been taken; and (4) explains why safety procedures are introduced or changed.

#### b. Proposed Amendments to Subpart E

The FAA is proposing two amendments to the safety promotion requirements of subpart E. First, as in the other subparts, § 5.91 and § 5.93 would be amended to reflect the broader applicability of proposed part 5 by replacing "certificate holder" with "any person required to have an SMS under this part." Second, the FAA proposes to add new § 5.94 to require notification of hazards to interfacing persons, and require any person subject to part 5 to develop and maintain procedures for reporting hazard information to interfacing persons and for receiving hazard information from other parties.

In some circumstances, a hazard might be identified by a person who is not in a position to address the hazard or there may be another person who could implement a more effective mitigation. For example, there may be a hazard identified by an aircraft operator that needs to be addressed by an aircraft manufacturer to mitigate the hazard for other operators. Similarly, an aircraft manufacturer may identify a hazard for which crew procedures or training are an appropriate mitigation to be taken by an operator. In § 5.94, the FAA proposes

that persons required to have an SMS under part 5 must share information regarding identified hazards with interfacing persons identified in their system description under proposed § 5.5 who, to the best of their knowledge, could address the hazard or mitigate the risk. Interfacing persons may be other private entities or a government entity, including the FAA. For example, a person required to have an SMS might determine that, to the best of their knowledge, the FAA's Air Traffic Organization is the interfacing person who would be in the best position to address the hazard. The number of business connections that would fall within the scope of an "interfacing person" is not limitless, however. An interfacing person would be an entity providing a good or service connected to aviation safety. A payroll accounting firm, for example, would not fall within this requirement. Within that boundary, an organization's total number of interfacing persons would likely be related to the size and complexity of the operation. The more external entities an organization relies on for aviation safety purposes, the greater the number of interfacing persons they would have for the purposes of this rule.

There may be instances in which the person with an SMS under part 5 is required to communicate hazard information to an interfacing person who is not required to maintain an SMS under part 5. In this case, there is still a utility and benefit to safety in communicating hazard information even where the receiving party does not have to comply with part 5 because the receiving party may still address the hazard. Further, while persons are only required to share hazard information to relevant interfacing entities who, to the best of their knowledge, could address the hazard, the proposed requirements do not preclude anyone from sharing additional information with additional entities if they so choose.

The number of interfaces an organization has depends on the type of goods or services the organization provides. FAA believes companies already know who their interfaces are, since the service providers, suppliers, and customers are those with whom they have an ongoing business relationship.

In accordance with standard business practices, these organizations already have records of these relationships for purchasing, payment, and shipment purposes. Therefore, the FAA does not believe it would be burdensome to document these existing interfaces and share information about hazards, when appropriate, leveraging existing contacts

and channels of communication. The FAA anticipates that the organization would update and revise contact information for these interfaces as a normal part of day-to-day business, as they would even in the absence of this proposed rule.

For example, an aircraft manufacturer may identify that the interfacing persons in their system description include various suppliers. The manufacturer has a business relationship with these interfaces. As with most business relationships, these relationships include a way to communicate hazards with all of these interfaces including their suppliers, repair stations, and customers. The manufacturer might issue a service bulletin or an operator information letter. It could also communicate a hazard directly with a supplier or through its supplier management/purchasing organization.

The purpose of this proposed requirement is to ensure that relevant information is shared with the person in the best position to address the hazard or mitigate the associated risk prior to an incident or accident occurring. This sharing would enable a network of organizations that would work collaboratively and be more effective at identifying hazards and mitigating risk than an individual organization working in isolation.<sup>56</sup>

The following examples illustrate the network effect the FAA believes would be created by the proposed requirement to share hazard information.

*Example 1:* A part 121 operator receives an employee report from a pilot stating that the aircraft flight management system deviated from the expected landing approach at a particular airport. The flight crew notices the deviation and corrects the flight path for a safe landing. The operator's management classifies this employee report as a hazard because the airport is surrounded by high elevation terrain. Although this incident occurred during daytime and in visual meteorological conditions, management determines that if the same issue occurred during a night landing or in instrument meteorological conditions, the aircraft could be turned toward terrain without detection by the flight crew, potentially resulting in an accident.

<sup>56</sup> The FAA is not aware of other CAAs currently requiring this type of collaborative approach. However, industry has recognized the value of this approach and it is discussed in the international standard: SM-0001\_Issue B—Implementing a Safety Management System in Design, Manufacturing and Maintenance Organizations, which was developed by industry.

The operator's management mitigates the risk through the safety risk management process by publishing an internal notice to all its flight crews warning of the issue and requesting them to avoid using that particular approach when flying into the particular airport. Additionally, the operator determines that the best person to mitigate the risk is outside its organization and uses its system description to identify the appropriate interfacing person with whom the information regarding this hazard should be shared. Per proposed § 5.94, the operator sends a hazard report to the aircraft manufacturer. The aircraft manufacturer, who is a TC and PC holder, receives the hazard report and begins an investigation of the issue. The aircraft manufacturer also reports the issue per proposed § 5.94 to the flight management system supplier and navigation database supplier, which, although not required to have an SMS, are interfacing persons identified in the aircraft manufacturer's system description.

The aircraft manufacturer initiates safety risk management on the issue. Through computer simulation, the aircraft manufacturer duplicates the incident reported by the part 121 operator.<sup>57</sup> The aircraft manufacturer safety risk management team develops and completes two actions: one short term to mitigate the risk, and one long term to eliminate the hazard. For the short-term mitigation, the flight management system database is updated to remove the affected approach. This database update occurs monthly, so all airlines flying with the flight management system automatically receive the update. For the long-term mitigation, the flight management system software is updated to correct the flight management system deviation. The aircraft manufacturer issues a service bulletin to all airlines recommending incorporation of the software update. Following the software update incorporation, the affected approach is added back into the navigation database and all airlines automatically receive it at the next monthly update.

This example illustrates how an employee report pursuant to § 5.71(a)(7) and communication between

<sup>57</sup> It is common for an Original Equipment Manufacturer to replicate an incident after receiving a report. Typically, the manufacturer would reach out to the reporting entity (in this example, the airline operator) to gather as much information as available about the incident. While there are risks with information transfer delays between the interfacing entity and the reporting entity, FAA believes these will be improved with the proposed rule requiring hazard information sharing.

organizations would assist in quickly mitigating and later eliminating a hazard that could result in an accident if not addressed. The pilot reported the incident, the airline performed the organization's safety risk management process, and also reported the hazard to the aircraft manufacturer pursuant to § 5.94. The aircraft manufacturer reported the hazard to the flight management system supplier pursuant to § 5.94 and then performed safety risk management to initially mitigate the risk and ultimately eliminate the hazard.

Without applying this new requirement, under the current process, the part 121 operator would report the incident to FAA flight standards under § 121.703(c). Flight standards would evaluate the incident and, if determined to be an airworthiness concern, would report it to the appropriate Aircraft Certification Office. The Aircraft Certification Office would then complete a risk analysis per FAA Order 8110.107. If the risk assessment was determined to be unacceptable, the aircraft certification office would work the aircraft Original Equipment Manufacturer to develop corrective action. The proposed rule requires direct hazard communication between the operator and Original Equipment Manufacturer which will facilitate more timely resolution of the incident.

*Example 2:* Three pilots, who work for a part 135 operator, report through the operator's employee reporting system that markings at the operator's home base airport at a newly paved intersection with a runway are confusing and nearly resulted in a runway incursion. The operator determines the reports are valid and notifies the airport authority of the pilots' observations in accordance with proposed § 5.94. The airport then could close that taxiway intersection and remark the pavement.

*Example 3:* A § 91.147 LOA holder who conducts air tours in a Stearman Biplane procures a radial engine from a repair station that specializes in overhauling radial engines. The rebuilt engine is installed on the aircraft, ground tested, and then flown for a 3-hour maintenance test flight to ensure the engine is operating correctly. During the test flight, the engine seems to stop producing power altogether when the throttle is reduced to idle. On final approach, the engine stops, and though the aircraft lands without incident, the engine cannot be restarted because the idle jet in the carburetor vibrated out of the tapped fitting. The LOA holder and operator of the Stearman report the issue to the part 145 repair station in accordance with proposed § 5.94. While

the repair station is not required to have an SMS, they would have a duty to conduct an investigation under § 145.221.<sup>58</sup> The repair station investigates its stock of carburetor jets and finds five additional jets in a single lot that were improperly threaded. The repair station can then isolate the nonconforming lot of jets and rebuild the faulty carburetor. This example illustrates that there is still benefit to sharing hazard information with entities that would not be required to have an SMS.

Finally, the FAA acknowledges that there may be some concern regarding sharing information outside an organization. The FAA does not expect that sharing hazard information would require the sharing of proprietary information; it would only require the organization to adequately describe the hazard. The FAA expects that in instances where the hazard cannot be adequately described without the use of proprietary information, the organization itself would likely be in the best position to address that hazard, and therefore, information sharing would not be necessary. The FAA seeks comment on whether organizations can share information about hazards without disclosing proprietary information. The FAA also seeks comment on whether the holder of the proprietary information would be in the best position to address the hazard. Please provide examples of any situations in which the holder of proprietary information would not be able to share information about a hazard without disclosing that proprietary information.

#### 5. SMS Documentation and Recordkeeping (Subpart F)

Documentation of SMS processes, procedures, and outputs is necessary for persons to conduct a meaningful analysis under safety risk management, to review safety assurance activities, and for the FAA to review for compliance during inspections. Documentation and recordkeeping also preserve information that can be used to make future safety-related decisions.

##### a. Summary of Current Requirements in Subpart F

The documentation and recordkeeping requirements for SMS holders are currently contained in

<sup>58</sup> Under this existing requirement, the repair station must submit a Service Difficulty Report. In the Service Difficulty Report, the repair station must include the "apparent cause of the failure, malfunction, or defect," meaning that the repair station would have to conduct an investigation to determine the apparent cause.

subpart F of part 5. As currently described in § 5.95, the certificate holder is required to document its safety policy and SMS processes and procedures. Organizations with an SMS under part 5 are required to document their safety policy and SMS processes and procedures.

As described in § 5.97, the certificate holder currently must maintain records of the outputs (e.g., risk assessments and implemented risk controls) of safety risk management and safety assurance processes. Outputs of safety risk management processes must be retained for as long as they remain relevant to the operation. Records can be kept either electronically or in paper format. In addition, the certificate holder is required to retain outputs of safety assurance processes for a minimum of five years, SMS training records for as long as the individual is employed by the person, and communication records for a minimum of 24 months.

Communication records required to be retained would be limited to any communications related to SMS-related policies, processes and tools, hazard information, safety actions taken, and why safety procedures were introduced or changed. The timelines associated with the retention of these documents ensure that they are kept for a time period that provides the certificate holder with sufficient historical data to assure compliance and to conduct the required analyses and assessments. A certificate holder may retain its documents for longer time periods if needed.

The documentation and records keeping requirements, like the rest of part 5, are designed to be scalable and flexible to accommodate a wide variety of business models and sizes. The specific information to be documented, and the means through which it is documented and retained, may vary depending on the scope and complexity of the systems. Organizations are currently required to maintain a myriad of business records. We anticipate that they will leverage existing systems or methods of records retention to meet these new requirements. The flexibility in the requirements enable the organization to use the most efficient means to fit their operations. For more information regarding scalability, please refer to Section V.F.

##### b. Proposed Amendments to Subpart F

The FAA is proposing to amend §§ 5.95 and 5.97 to change "certificate holder" to "any person required to have an SMS under this part." In addition, the FAA is proposing to add § 5.95(c) to require the documentation of the system



description developed under proposed § 5.5(b). The proposed addition is necessary to ensure that the system description would be documented.

The FAA is proposing to amend § 5.97(d) to require the persons required to have an SMS to retain records of all communications that occur under the hazard reporting requirements of proposed § 5.94 for a minimum of 24 consecutive calendar months. This proposed requirement is necessary to ensure consistency in the records for communications required under § 5.93 and proposed § 5.94. Maintaining these records would also enable traceability between information that is received from outside entities and actions taken using safety assurance or safety risk management processes. These records would be kept either electronically or in paper format. The timelines associated with the retention of these documents would ensure that they are kept for a time period that provides the organization with sufficient historical data to assist the FAA with oversight. Nothing in the proposed rule would preclude a person required to have an SMS under part 5 from retaining documents for longer time periods if they so choose.

#### *D. Implementation of SMS*

##### 1. Requirements for Part 121 Operators

Part 121 operators currently must comply with the part 5 requirements. The FAA is proposing to add § 5.7 to establish certain new requirements and compliance dates for part 121 operators.

Proposed § 5.7(a) would apply to all part 121 operators that have an FAA-accepted SMS as of the effective date of a final rule adopted pursuant to this rulemaking. The requirements in proposed § 5.7(a) are necessary to bring part 121 operators into compliance with the proposed revisions to part 5. Part 121 operators would be required to revise their SMS to meet the new requirements proposed in §§ 5.5(b) (System Description), 5.21(a)(7) (Safety Policy Code of Ethics), 5.53(b)(5) (Safety Risk Management Interfaces), 5.71(a)(7) (Employee Confidential Reporting System), 5.94 (Hazard Notification), 5.95(c) (Documentation of System Description), and 5.97(d) (SMS Records), discussed in this section. Because part 121 operators already have an accepted SMS, the FAA considers that these new requirements would require minor adjustments. For example, current part 121 operators should be able to develop a system description with relative ease because they already have an FAA-accepted SMS and all the information needed for

development of the system description. Also, a statement of compliance is unnecessary because the FAA has completed its review of the operator's SMS prior to the enactment of this rule. The changes to this entity's SMS are minimal and the FAA can review such changes in the normal course of its oversight of the operator.

Because the proposed requirements may be met with relative ease, the FAA has determined that 12 months would provide a sufficient amount of time for current part 121 operators to implement any necessary changes based upon the amendments to part 5 and submit revisions to their SMS to the FAA for acceptance.

Under proposed § 5.7(a)(2), part 121 operators would have to submit revisions to their SMS for FAA acceptance in a form and manner acceptable to the Administrator no later than 12 months following the effective date of the rule. The FAA expects that current part 121 operators would submit revisions to their SMS through the same process they currently use for submission of changes for acceptance by the FAA.

Proposed § 5.7(b) would apply to any person applying for authorization to conduct operations under part 121 of this chapter after the effective date of the rule. New certificate holders authorized to operate under part 121 would have to develop, implement, and maintain an SMS that complies with the requirements of part 5 as amended by this rulemaking. Those seeking to operate under part 121 would have to submit the statement of compliance in a form and manner acceptable to the Administrator as part of the certification process. Under this proposal, the FAA would incorporate review of a person's compliance with part 5 requirements into the certification review process.

The statement of compliance must describe how part 5 requirements have been met, and the FAA would review that statement of compliance during the certification process to assess the applicant's compliance with part 5. The statement of compliance enables the FAA to validate the applicant's compliance with part 5 prior to issuing a certificate.

##### 2. Requirements for Part 135 Operators and Holders of § 91.147 Letters of Authorization

The FAA is proposing to add new § 5.9 to establish requirements and compliance dates for part 135 operators, and holders of an LOA issued under § 91.147. Proposed § 5.9(a) would require those certificate or LOA holders to develop and implement an SMS in

compliance with part 5 no later than 24 months after the effective date of the proposed rule. The FAA expects certificate holders or LOA holders to submit the statement of compliance for acceptance by the FAA within 24 months after the effective date of this proposed rule. Proposed requirements for statements of compliance are described further in this section. This rule would also require these operators to maintain their SMS in accordance with part 5.

Proposed § 5.9(b) would affect those persons applying for a certificate under part 135 or those applying for an LOA under § 91.147 who have not yet received their certificate or LOA prior to the effective date of this proposed rule. These persons would be required to develop and implement an SMS that meets the requirements of part 5 before their certificate or LOA could be issued. They would be required to submit a statement of compliance in a form and manner acceptable to the Administrator during the certification process or LOA issuance process. These operators would also be required to maintain their SMS in accordance with part 5.

Based on lessons learned and the experience gained from part 121 operators who have previously implemented SMS, as well as the voluntary program implementation for part 135 operators, the FAA proposes that 24 months is adequate to implement an SMS and provide a statement of compliance to the FAA. This timeframe allows the operator sufficient time to implement SMS without unnecessarily delaying the realization of benefits derived from SMS.

##### a. Statements of Compliance for Current Part 135 Operators and § 91.147 Letter of Authorization Holders and Applicants

Under this proposal, part 135 operators, and § 91.147 LOA holders would be required to develop an SMS and integrate that SMS into the existing operations of the certificate or LOA holder. The certificate or LOA holder would also be required to submit a statement of compliance in a form and manner acceptable to the Administrator no later than 24 months following the effective date of this proposed rule.

The statement of compliance notifies the FAA that the organization has complied with part 5 and prompts the FAA to update its oversight tools to include SMS. Although these statements of compliance would not be subject to an approval process, the FAA would validate the part 135 operators' and § 91.147 LOA holders' compliance with

part 5 and the accuracy of their statements of compliance under existing oversight processes. Because the certificate or LOA holder would be required to integrate the SMS into its existing operations processes during implementation, the FAA expects that existing oversight processes are sufficient to oversee and validate part 5 compliance. The FAA would review statements of compliance upon submission and would validate that the organization's SMS meets the part 5 requirements over the course of several inspections. If, during those inspections, the FAA finds that the SMS does not meet the requirements of the proposed rule, a notification in writing of the deficiencies would follow.

The proposal would also require applicants for authority to conduct operations under part 135 or § 91.147 to submit a statement of compliance to the FAA for acceptance during the certification or LOA application process, as applicable. The statement of compliance enables the FAA to validate the applicant's compliance with part 5 prior to issuing a certificate or LOA.

#### b. Statements of Compliance for Existing Part 121/135 Combination Certificates

For those part 119 certificate holders with combination certificates authorizing them to operate under parts 121 and 135 that already have an SMS in place due to the current part 5 requirements for part 121 operators, the FAA would review the part 121/135 operator's revised SMS submission. Certificate holders authorized to operate under parts 121 and 135 whose SMS was previously acceptable to the FAA for the part 121 portion of their organizations may choose to expand their existing SMS processes already in place to include their part 135 operations. In this case, certificate holders would submit the changes to their SMS for acceptance as described for the existing part 121 certificate holders in Section V.D.1.

Certificate holders would also be required to submit a statement of compliance for the part 135 operations. The FAA would accept the submitted statement of compliance and validate the operator's compliance with part 5 using existing oversight processes, as discussed in Section V.D.5. The FAA expects that documenting the statement of compliance for the part 135 operations would be comparatively simple because the operator has already met SMS requirements for the part 121 operations. Currently, of the seven existing combined certificates, five have already implemented SMS that covers both part 121 and 135 operations.

#### 3. Requirements for Holders of Both Type Certificates and Production Certificates Issued for the Same Product Under Part 21 and Certain Part 21 Production Certificate Applicants

The FAA proposes to add a new § 5.11 to establish certain SMS requirements and compliance dates for holders with a TC and a PC for the same product issued under part 21. The FAA proposes a person that holds both a TC and a PC for the same product issued under part 21 of this chapter on or before the effective date of the proposed rule would be required to: (1) develop an SMS that meets the requirements of this part; (2) submit an implementation plan for FAA approval in a form and manner acceptable to the Administrator no later than December 27, 2024; (3) implement the SMS in accordance with the FAA-approved plan no later than December 27, 2025; and (4) maintain the SMS in accordance with this part.

As discussed in Section IV.D., the proposed requirements are consistent with section 102(a)(1) of ACSAA, which requires that the FAA's rulemaking require these certificate holders to adopt an SMS by four years from enactment of the statute, December 27, 2024.<sup>59</sup> Because the implementation plan would require certificate holders to submit a description of how they would comply with the part 5 requirements, including but not limited to the policies, processes, and procedures used to meet those requirements, the FAA considers the certificate holder to have adopted the SMS system at the time the certificate holder files the implementation plan. By filing the implementation plan for FAA approval, the certificate holders commit to implementing the SMS described in the implementation plan and any modification to the SMS required by the FAA during the implementation plan approval process.

Under proposed § 5.13, the FAA proposes a person that holds, is applying for, or has a pending application for a PC under part 21 of this chapter for a product for which the person holds or is a licensee for a TC, would be required to: (1) develop an SMS that meets the requirements of this part; (2) submit an implementation plan for FAA approval in a form and manner acceptable to the Administrator during the certification process; (3) implement the SMS in accordance with the approved plan no later than one year from the FAA's approval of the implementation plan; and (4) maintain the SMS in accordance with this part.

<sup>59</sup> Section 102(a)(2)(D) of ACSAA.

Furthermore, under proposed § 5.15, the FAA is proposing to establish certain SMS requirements for any person that holds a TC for a product who allows another person to use the TC to manufacture a product under a PC. However, the requirements proposed in § 5.15 are consistent with those proposed in §§ 5.11 and 5.13.

Persons subject to §§ 5.11, 5.13, or 5.15 would not be required to file a statement of compliance under this proposal because these organizations would have to implement their SMS in accordance with their FAA-approved implementation plan which is sufficient for the FAA to verify their compliance with part 5.

#### 4. Implementation Plans

##### a. Implementation Plans for Part 21

FAA proposes to add a new § 5.17 to establish requirements for implementation plans filed under proposed §§ 5.11 (PC holders who are holders or licensees of a TC for the same product), 5.13 (TC holders or licensees applying for a PC for the same product), and 5.15 (TC holders who license their TC to others to obtain a PC). The implementation plan would include a description of how the person intends to comply with part 5, including, but not limited to, new or existing policies, processes, or procedures used to meet the requirements of part 5. The description would also demonstrate how that person would comply with the requirements of part 5 once the SMS is implemented and may reference manuals and other relevant documentation.

Upon request by the FAA, any person required to submit an implementation plan under the proposal would have to provide the FAA access to the data necessary to demonstrate that the person has developed and implemented an SMS that meets the applicable part 5 requirements. This data could include the outputs of safety risk management.

For a person that holds both a TC and a PC for the same product issued under part 21 of this chapter (§ 5.11), or for persons that hold a TC that have licensed their TC to allow another person to use that TC to obtain a PC (§ 5.15(a)), on or before the effective date of the final rule, the person would submit an implementation plan to the FAA for approval in a form and manner acceptable to the Administrator by December 27, 2024. Section 102(a)(1) of ACSAA requires the FAA's rulemaking to require holders of both a TC and a PC to adopt an SMS by December 27, 2024. The FAA recognizes that ACSAA does not apply to persons who license their

TC to allow another person to obtain a PC. However, the FAA is proposing the same compliance deadlines for consistency purposes. The FAA invites comments about whether the FAA should extend the compliance timelines for persons who license their TC to other persons and, if so, what timelines the FAA should establish. The FAA requests that responsive comments include the commenter's rationale for the proposed compliance timelines.

Section 102 of ACSAA also requires the FAA to: (1) promulgate rules to require SMS for holders of both a TC and PC, and (2) approve the certificate holders' SMS. By approving the implementation plans from part 21 certificate holders, the FAA would review the submission and would determine whether the implementation plan appropriately describes how the entity intends to comply with the requirements of the proposed part 5. Additional information regarding the form and manner of submission would be available in Advisory Circular (AC) 21-58, Safety Management Systems for Part 21 Type and Production Certificate Holders.

The implementation plan would include a description of how the person intends to comply with the requirements of the proposed rule. The FAA would review and approve the implementation plan and provide confirmation to the person of FAA's approval of the implementation plan. The person would then be required to implement the FAA-approved SMS by December 27, 2025, and maintain the SMS in accordance with the approved implementation plan.

After the effective date of the proposed rule, a person applying for a PC under part 21 for a product for which the person holds a TC, or for which an application is pending, would submit the implementation plan for FAA approval during the certification process. For persons who hold a TC and are entering into a licensing agreement to allow another person to use that TC to obtain a PC, the TC holder would submit the implementation plan for FAA approval when providing the written licensing agreement in accordance with § 21.55. The FAA would review the applicant's implementation plan and approve the means by which the person intends to comply with the applicable sections of the proposed rule. The person would then be required to implement the FAA-approved SMS within one year after FAA's approval and maintain the SMS in accordance with the implementation plan.

#### b. Removal of Implementation Plan Requirement

Currently, § 5.1(b) states that a part 119 certificate holder must submit an implementation plan to the FAA for review no later than September 9, 2015, and the implementation must be approved no later than March 9, 2016. Additionally, current § 5.1(c) states that the implementation plan may include any of the certificate holder's existing programs, policies, or procedures that it intends to use to meet the requirements of part 5, including components of an existing SMS. These requirements applied to part 119 certificate holders who were authorized to conduct operations under part 121 as of the effective date of the 2015 final rule. The FAA adopted these requirements to ensure that part 121 operators properly developed SMS within the required timeframe. The FAA proposes to remove these requirements because the dates have passed, and the requirements are no longer necessary. All part 121 operators have developed and implemented SMS in accordance with part 5.

The FAA recognizes that the proposed rule would extend the SMS requirements to additional entities who already hold certificates, and these certificate holders would have to develop and implement an SMS in accordance with part 5. Based on the FAA's experience with part 121 operators complying with part 5 and those entities participating in the voluntary SMS program, the FAA proposes to require new applicants for certificates to operate under part 121, as well as certificate holders under part 135 and LOA holders under § 91.147 to submit a statement of compliance in lieu of an implementation plan. Certificate holders receive continuous oversight and are regularly inspected by the FAA. The FAA has determined that the existing oversight processes such as FAA's Safety Assurance System,<sup>60</sup> would be sufficient to ensure compliance with part 5 by certificate holders under parts 121 and 135 and § 91.147 LOA holders, and therefore it is not necessary to require an implementation plan.

<sup>60</sup> The Safety Assurance System is the Federal Aviation Administration's oversight tool to perform certification, surveillance, and Continued Operational Safety. The Safety Assurance System includes policy, processes, and associated software the FAA Flight Standards Service uses to capture data when conducting oversight. For more information see: <https://www.faa.gov/about/initiatives/sas>.

#### 5. Compliance

In accordance with the FAA's compliance program, FAA personnel investigate apparent violations of FAA statutes and regulations and have a range of options available for addressing apparent violations, when appropriate, including compliance, administrative, and enforcement action. The FAA's goal is to use the most effective and appropriate means to ensure compliance with part 5 and prevent recurrence. The underlying principles and oversight processes that form the foundation of FAA's approach to compliance would not change under this proposed rule.

*E. Proposed Changes to Sections 119.8, 91.147, 21.135, and 21.147*

##### 1. Proposed Amendments to Section 119.8

The FAA is proposing to revise § 119.8 to require certificate holders authorized to conduct operations under part 121 or 135 to comply with the applicable requirements of part 5. Currently, § 119.8 only requires certificate holders authorized to conduct operations under part 121 to comply with the SMS requirements in part 5; the proposed revision would add part 135 operators. Additionally, the FAA is revising § 119.8 to remove the compliance dates which have passed and are no longer applicable.

##### 2. Proposed Amendments to Section 91.147

As discussed in Section V.A.2., the FAA proposes to require LOA holders operating under § 91.147 to meet the requirements of part 5. Specifically, the FAA proposes to amend § 91.147 to require an operator conducting passenger carrying flights for compensation or hire to have an FAA-accepted safety management system that meets the requirements of part 5, and to add a requirement for an LOA applicant to submit with the application the statement of compliance required under part 5. The FAA also proposes non-substantive changes, including organizational changes to improve the readability of the section.

The requirement for LOA holders and applicants to develop an SMS that complies with part 5 would be found in both part 5 and in § 91.147. Although part 5 would be applicable to § 91.147 LOA holders under proposed 5.1, this amendment is necessary to make compliance with part 5 a requirement for operation.

Because § 91.147(c) contains a complete list of all documents that applicants for an LOA must submit as part of their application, the FAA is

proposing to add the statement of compliance required under proposed § 5.9(b)(2) to the list of documents submitted when applying for an LOA.

To eliminate redundancy in the regulations, the FAA is proposing to remove the phrase “for drug and alcohol testing” from current § 91.147(a), which defines “operator” for the purposes of § 91.147 and for drug and alcohol testing.<sup>61</sup> The drug and alcohol testing requirements are contained in part 120 of 14 CFR. Under part 120, the regulations reference “operator as defined in § 91.147” numerous times. In light of these cross-references, which expressly refer to the definition of operator in § 91.147, the FAA has determined that it is unnecessary and redundant for current § 91.147(a) to state that the definition of operator is “for drug and alcohol testing.”

### 3. Proposed Amendments to Sections 21.55, 21.135, and 21.147(b)

The FAA proposes to add a new paragraph (c) under § 21.135 to require each applicant for or holder of a PC to meet the applicable requirements of part 5. A conforming edit is also proposed for § 21.147(b) to add the proposed § 21.135(c) to the list of requirements with which applicants for an amendment to a PC must comply. Because ACSAA requires the Administrator to approve a part 21 certificate holder’s SMS, the FAA is proposing these changes to part 21 to ensure that compliance with part 5 would be a pre-requisite for obtaining or amending a PC.

Additionally, the FAA is proposing to revise § 21.55 to require a type certificate holder, who allows a person to use the type certificate to manufacture a product to meet the applicable requirements of part 5. The FAA is also proposing to revise the heading of this section to account for the additional rule language.

#### F. Scalability

Under this proposal, part 5 would apply SMS requirements to organizations that are diverse in size and complexity (*i.e.*, aircraft fleet size, operations, product types and production volume, services, and number of employees). As the proposal is performance-based, the procedures

and documentation for compliance are scalable to accommodate a wide variety of business models and sizes. This proposed rule specifies a basic set of processes to form a framework for the SMS, but does not specify particular methods for implementing these processes. This provides a balance between standardization and a robust SMS structure while allowing considerable flexibility for how an individual aviation organization chooses to establish its SMS.

The SMS ARC recommended that part 5 be both scalable and flexible to accommodate many business models.<sup>62</sup> This recommendation was incorporated into the current requirements of part 5. The four components of SMS (safety policy, safety risk management, safety assurance, and safety promotion) set forth in part 5, identify the system’s requirements, but do not prescribe the means of achieving these requirements. Each organization has the flexibility to tailor an SMS that works for the organization’s size, scope, and complexity to comply with the proposed rule. To enable scalability and flexibility, part 5 would continue to describe the desired measurable outcomes that must be accomplished. This performance-based approach would grant flexibility by enabling regulated persons to develop methods, processes, or other means of compliance that are appropriate to the size, scope, and complexity of their organization and operations.

For example, the objective of safety risk management—to identify hazards, assess safety risk, and develop and monitor controls within the organization’s SMS—would be the same regardless of the size of the organization even though methods used might be different. The FAA does not anticipate that small organizations will need additional management and staff to satisfy the requirement elements of safety risk management. For example, smaller organizations, with few aircraft operating in a limited geographic area, might record, and track the results of the safety risk management process with paper records or digital files using common word processing or spreadsheet applications.

Additionally, persons required to have an SMS under the proposed rule would be able to comply with part 5 SMS requirements through a variety of means. The FAA considers that organizations may be able to leverage consensus or community standards, which are typically developed by third-

party consultants or trade associations, to meet the requirements of part 5. In addition, the FAA recognizes that persons may already have systems and processes in place that meet the part 5 requirements.

In addition, aviation organizations that perform more than one service would be able to adapt their SMS to align with the complexity of their operations. For example, some aviation organizations have multiple certificates (*e.g.*, the aviation organization might have multiple certificates authorizing it to conduct flight operations and to perform aircraft maintenance for other organizations, or the aviation organization might have multiple certificates authorizing it to manufacture certain products and perform flight operations or aircraft maintenance). An aviation organization with multiple types of certificates may choose to implement a separate SMS for each certificate by following the acceptance or approval process as applicable for each type of certificate. Although not required to do so, these aviation organizations may only want to implement one SMS that encompasses all their aviation-related safety activities. An aviation organization with multiple certificates would be required to meet the part 5 statement of compliance or implementation plan requirements as applicable for its certificates.

A single pilot operator would build an SMS using tools and procedures commensurate with the size, complexity, and sophistication of the organization. Small organizations are likely to rely on the same tools that they already use in their day-to-day operations. For example, an operator may rely on standard word processing software, Excel spreadsheets, email, or even paper record books to document the system, policies, processes, and procedures. The single pilot operator would choose based on their own preferences and comfort level with the different types of technologies. This is a business decision the operator will make to maximize its own efficiencies, and it may look very different even among organizations of comparable size. In the discussion that follows, the FAA provides examples of how an SMS might be scaled to particular persons who would be required to comply with this proposed rule.

The following example illustrates how a small single pilot operator could scale implementation of SMS to fit its organization. The responsible individual would first develop a system description, which would identify the aviation operations that would be

<sup>61</sup> One reason § 91.147 was added to the regulations was to clarify the applicability of drug and alcohol programs (Final Rule; National Air Tour Safety Standards, 72 FR 6884, Feb. 13, 2007). The FAA notes that part 120 was added two years later (Final Rule; Drug and Alcohol Testing Program, 74 FR 22649, May 14, 2009), which further functioned to eliminate confusion and streamlined the requirements of the drug and alcohol program.

<sup>62</sup> SMS ARC Recommendations Final Report, p.2. March 31, 2010.

covered by the SMS and its organizational interfaces. This might be a hand-written document or a digital file on a computer. The organization would then document its safety policy; again, this could be done on paper or in a digital file. The example provided in the appendix in AC 120–92 could be used as a starting point, but there are also various examples available on the internet that could be used as a starting point.

To meet safety risk management and safety assurance requirements, the operator could use a tool such as the Web-Based Analytical Technology (WBAT) platform which is FAA-supported software, to support employee reporting and SMS. The platform could also be used to meet recordkeeping and documentation requirements. However, simpler options such as digital files on a computer or paper files could be used as well. For instance, AC 120–92 provides worksheets that the operator could use to meet most safety risk management requirements. To meet safety assurance requirements in a simpler way in a single pilot operator, the pilot could observe how an operation is working and identify trends in real-time. If there are issues, the pilot could take appropriate action and reevaluate the results. Any operational process could be observed and does not necessarily require formal audits or forms. Again, all of this could be documented on paper or in a digital file.

To meet communication requirements a small operator might use existing email applications to share information within its organization and with interfacing organizations, as appropriate. To meet documentation and recordkeeping requirements, the organization could use paper or digital files just as they might do for other areas of their operations such as invoicing, service and rental agreements, etc. The organization could document this using a medium of their choosing, including something as simple as a notebook.

The example above references resources available through or supported by the FAA. However, as previously noted, third-party consultants and trade associations are also resources available to assist in the development of an SMS. Further, aviation colleges and universities, ICAO, and other civil aviation authorities such as EASA and Transport Canada Civil Aviation have material that can be used to help develop an SMS.

The following example illustrates how SMS might operate in a small, low complexity operator. This example

company has two helicopters and four pilots, and it provides air tour services within a 25 nautical mile range of its home airport. The company has developed a safety policy under § 5.21 that reminds everyone safety is the company's number one priority. It contains in bold letters at the bottom, "If you see something unsafe, say something." This policy statement is one page, signed by the company owner, and posted inside the office for all to see.

After a flight, one of the pilots reports to the air tour operator's home base that there is a new hazard in the flightpath of their desired tour route. The hazard is a power line across a canyon and there are no visibility markers on that line. The report of the hazard is the start of the safety risk management process under § 5.51(d). Under § 5.53, the air tour operator researches the location and height of the power line relative to the flight path in the area. The operator calls the power company and learns that the line is 1/2-inch thick and an expected date of installation for the markers is unknown due to manufacturing delays. This information is recorded in a notebook or digital file. Even the process for conducting this analysis under § 5.53(c) can also be located in the notebook or in a digital file.

Under § 5.53, the air tour operator determines the unmarked power line is an operational hazard. Knowing that helicopters and unseen power lines are a high risk, and realizing that the company's air tour route places them in the exact spot of the canyon where the unmarked power line exists, makes this particular risk assessment easy. The air tour company determines the severity of hitting that power line would be catastrophic and the likelihood of encountering that power line is high due to their route of flight. Using a risk matrix, the operator qualitatively determines that the risk of conducting tours with the presence of the unmarked power line is unacceptable and requires risk controls be implemented to reduce the risk to an acceptable level. All this information is placed into the notebook. The operator develops risk controls under § 5.55(c), which, in this case, is a deviation to the planned air tour route. The evaluation of the risk acceptance under § 5.55(d) is done by talking to other employees, brainstorming, or engaging with other operators. The records of meetings or conversations, as well as the risk controls themselves, are documented using a medium of their choosing, including something as simple as a notebook or digital file consistent with the recordkeeping requirements of § 5.97.

The operator's next step is to monitor the controls it put into place through its safety assurance program. The operator will check on the deviation to the route it put in place under § 5.71(a)(1) through proposed (a)(7). This can be done by tracking the flight path or auditing the new procedures and keeping those notes in the notebook. Under § 5.93, the operator will promote safety by informing the pilots of the hazard and communicating the safety action taken, which was providing the air tour route with a deviation. Each pilot can be issued a safety alert via a memo that can be handed to them upon check in and perhaps sent via email before the flight starts.

This example illustrates how aviation safety is improved because current regulations do not require operators to have a process to identify and manage hazards. For example, operators are not currently required to: have a process to proactively identify hazards before they become accidents, establish a structured method to assure hazards are controlled, have formal communication methods that notify all company personnel of new procedures, or keep records regarding safety actions taken to prevent possible accidents.

The FAA recognizes that there is a spectrum of complexity within organizations across the aviation product and service provider industry. As discussed earlier in this section, there are relatively low-cost implementation resources available to assist persons to meet part 5 requirements, including online platforms such as the Web-Based Analytical Technology (WBAT) platform. This platform supports all aspects of an SMS and it includes the following tools: SMS implementation manager, safety risk management, safety assurance, employee reporting, and data sharing. Additionally, the FAA has drafted guidance in which there are numerous scalability examples of how various organizations can meet the pertinent SMS requirements based upon where an organization may fall on the spectrum of complexity. The proposed Advisory Circulars (AC 21–58, Safety Management Systems for Part 21 Type and Production Certificate Holders and AC 120–92, Safety Management for Aviation Service Providers), provide in-depth discussions on how to meet each of the part 5 requirements, what tools/methods may be employed, how they may be employed, who would be involved, and includes sample tools and worksheets. For further information, see the draft AC 21–58, Safety Management Systems for Part 21 Type and Production Certificate Holders and AC

120–92 Safety Management for Aviation Service Providers, which are included in the docket of this proposed rule.

### G. Examples of Real World Scenarios

The following accident summaries provide examples of ways that an organization having an SMS under the proposed rule might provide mitigation in real world scenarios. To illustrate how SMS would be used by different entities under the proposed rule, the following accident summaries have been arranged by the type of operator or certificate holder involved in the accident.

#### 1. Accident Involving Design and Production Under Part 21

On June 28, 2015, a single engine aircraft crashed following a total loss of engine power due to the failure of the alternator drive coupling. The pilot and two passengers were fatally injured, and the airplane was destroyed by a post-crash fire. The manufacturer of the aircraft and aircraft engine were issued type and production certificates and the manufacturer of the installed replacement alternator coupling had been issued a parts manufacturer approval for the coupling pursuant to 14 CFR part 21. The instructions provided by the engine manufacturer did not advise that a loose or improperly tight coupling could lead to a loss of power.

The NTSB report highlighted a review of the engine manufacturer's warranty records for the 5 years preceding the accident revealed six claims relating to the alternator coupling.<sup>63</sup> If an engine manufacturer in this circumstance were required to comply with the proposed rule, the warranty information would be used to prevent future safety issues. Under § 5.71, the engine manufacturer would develop a process for warranty data it receives and conduct an investigation under § 5.71(a)(6). The engine manufacturer would conduct audits of its processes and the instructions it provided on how to inspect or measure the alternator coupling under § 5.71(a)(3) before distributing the coupling. In this accident, the NTSB report also mentioned there were 10 events filed in the FAA Service Difficulty Report System relating to the alternator coupling.<sup>64</sup> The engine manufacturer

<sup>63</sup> In this example, the organization is a medium-sized company that manufactures engines. The FAA does not have detailed data on the number of warranty claims during the five-year period.

<sup>64</sup> Service Difficulty Reports are evaluated by FAA flight standards offices. If the initial evaluation indicates a serious airworthiness problem, the FAA Aircraft Certification Office and the Aircraft Evaluation Division responsible for the product

would analyze those reports under § 5.71(b), which could have also revealed the inadequacy of the procedures. Then, under § 5.73, the engine manufacturer would conduct an assessment of its safety performance and ensure compliance with the risk control it established in developing new instructions for the inspection and measuring of that alternator coupling.

Section 5.51(d) would require the engine manufacturer to apply the safety risk management process to the information collected under § 5.71 that indicated the identification of hazards or ineffective risk controls. Section 5.53(a) would require the engine manufacturer to analyze its systems resulting in a focused evaluation of the maintenance instructions and tooling requirements provided with the distribution of the alternator coupling. Then, under § 5.55, the engine manufacturer would analyze the safety risk associated with the procedures that inadequately ensured that the coupling was properly tightened, determine whether the risk was unacceptable, and may develop risk controls that could result in a different set of maintenance instructions.

#### 2. Accident Involving Part 135 Operator

On June 25, 2015, a single-engine, turbine-powered, float-equipped airplane, operated by a part 135 on-demand air carrier, collided with mountainous, tree-covered terrain about 24 miles east-northeast of Ketchikan, Alaska.<sup>65</sup> The pilot and eight passengers sustained fatal injuries, and the airplane was destroyed.

The NTSB established the probable cause of this accident as the pilot's decision to continue visual flight into an area of instrument meteorological conditions, which resulted in his geographic disorientation and controlled flight into terrain. The NTSB report listed several contributing factors: (1) the operator's company culture, which tacitly endorsed flying in hazardous weather and failed to manage the risk associated with the competitive pressures affecting Ketchikan-area air tour operators, (2) the operator's lack of a formal safety program, including not having an SMS, and (3) the operator's inadequate operational control of flight releases. The NTSB found that the operator's management did not hold

must be informed of the equipment service difficulty and any recommendations for corrective actions. Original Equipment Manufacturers are not notified when a Service Difficulty Report is logged. Currently, manufacturers are not required to proactively scan the Service Difficulty Reports database.

<sup>65</sup> NTSB accident number ANC15MA041.

themselves accountable for conducting safe operations and fostered a company culture that condoned operating in weather conditions with inadequate visibility for visual flight.

If the proposed rule had been in effect during this time, the operator would have had requirements that may have prevented or mitigated an accident such as this one.<sup>66</sup> With an SMS, the operator would have a safety policy that clearly articulates the company's safety objectives and its commitment to safety as required by § 5.21. Under §§ 5.23 and 5.25, the operator would have to define accountability for safety within the organization and identify those members of management that are responsible for hazard identification, safety risk assessment, and safety promotion within their areas of responsibility. The operator allowed the operational control functions to be delegated to flight schedulers. Operational control provides for management of planning, departure, and inflight decision making to assure the safety of flights. These operational control functions were not performed adequately by those flight schedulers, leading to a loss of effective operational control. Section 5.23 requires all members of management to be accountable for their area of responsibility. Operational control responsibility resides with the Director of Operations, a required management position for an air carrier.

Section 5.51 would require the operator to apply safety risk management in the development of operational procedures. The operator had a policy that both the pilot and flight scheduler must agree that the flight can be conducted safely before a flight may be launched. This action did not take place and, more importantly, the decision to initiate that particular flight was made by a new pilot who was subject to cultural and peer influences. Section 5.51 would help close this gap by requiring the operator to conduct safety risk management when developing its procedures, policies, and training. During the safety risk management process, § 5.53 would require the operator to analyze its procedures and policies of operational control with the consideration of the operating environment of Ketchikan and the pressure of getting those passengers back to their cruise ship on time. Section 5.55 would require the operator to assess its risk and develop risk controls so the pilot would not be the sole decision maker regarding whether

<sup>66</sup> In this example, the operator employed approximately 30 to 40 people.

the flight should proceed.<sup>67</sup> Section 5.55 would also add an additional control to its training program, requiring the inclusion of the risk of the operating environment and the hazardous local weather patterns.

The safety assurance requirements of § 5.71 would require the operator to monitor its operational processes and operational environment, to include auditing its processes and procedures. Any of these monitoring actions could have revealed that the company procedures relating to operational control of their flights were not followed. Upon discovering those discrepancies, the operator would enter back into the safety risk management process and carefully look at those procedures to include interfaces, such as training of personnel involved, to ensure all company personnel are adequately trained to follow the company procedures. Additionally, auditing of the operator's pilot training program under § 5.71 might reveal the exclusion of two items, training of hazardous local weather patterns and controlled flight into terrain avoidance training. Both are essential training items for this environment, which potentially could be identified during an analysis under § 5.53.

Under § 5.91, the operator would be required to provide SMS training to management personnel. This SMS training could positively affect the safety culture of the entire organization. Section 5.93 would require the operator to explain why safety actions and procedures are introduced or changed, thus also having an effect on the safety culture.

The FAA recognizes that in this example, the operator was already in violation of its internal company policies. Although the company's policy included a requirement not required by regulation, the documentation that the company was not adhering to its own policies could be evidence that the organization is not maintaining its SMS per this proposed rule. Documentation requirements under an SMS create objective evidence that the organization is identifying hazards, assessing risk, and mitigating that risk as needed. The FAA may audit this evidence at any time. Where the person has failed to comply with FAA regulations, including SMS regulatory requirements, the FAA may take enforcement action. This would also help the FAA identify safety-deficient organizations.

<sup>67</sup> In this example, the operator already had a policy requiring more than one person to decide whether the flight should be initiated. Therefore, the operator was not in conformance with its company policy related to operational control.

Knowledge that adherence to its SMS policies could be audited by the FAA may encourage an organization to develop a stronger safety culture.

### 3. Accident Involving Helicopter Air Tour Conducted Under Section 91.147

On February 18, 2006, a helicopter operated by an air tour operator crashed into the Pacific Ocean, off the coast of Hawaii, after attempting an emergency landing following a maintenance malfunction of the main rotor.<sup>68</sup> Three of the passengers were able to exit the helicopter but one passenger was trapped inside and drowned.

The NTSB determined the probable cause of this accident was the in-flight failure of the engine to transmission drive shaft due to improper maintenance, which resulted in low main rotor rpm and a subsequent hard landing on water.

The NTSB highlighted in its findings a failure of adequate managerial oversight during a critical maintenance task on the aircraft. A rated mechanic was not present throughout the removal, inspection, and reinstallation of the engine-to-transmission drive shaft. Additionally, maintenance records revealed no entries for the required annual inspection, or the 100-hour inspections and several required component inspections were overdue. Even though both of these deficiencies were violations of existing regulations, the FAA believes that an SMS would have allowed for the organization to self-identify, correct, and prevent the issue, negating the need for after-the-fact enforcement of non-compliance with the current regulation. If the operator implemented an SMS as proposed by this rule, the accountability for all members of management regarding their area of responsibility would have been explicitly defined, as required by § 5.23.

The NTSB final accident report indicated the accident was caused by the in-flight failure of the engine-to-transmission drive shaft due to some missed maintenance processes. Under § 5.71, the organization could have identified the missing steps in the maintenance process. NTSB's review of maintenance records revealed no entries pertaining to a current annual inspection or 100-hour inspection. An auditing process under § 5.71 could have identified this deficiency. Additionally, a component inspection sheet provided by the operator revealed that several required component inspections were overdue and had not been completed at the time of the

<sup>68</sup> National Transportation Safety Board accident number WPR16FA072.

accident. The operator reported to the NTSB that he knew those inspections were coming due but did not realize the helicopter had flown such that it exceeded the inspection interval (which was a violation of existing regulatory requirements). Therefore, the owner did not know those items were overdue until he printed the status sheet for the investigation of the accident. If the operator monitored its operational processes as would be required under § 5.71, it would have conducted safety risk management under § 5.51 that would have identified hazards involving the lack of procedural actions resulting in overdue inspections. The organization would then develop and implement additional safety risk controls by applying § 5.55, such as management oversight, thus preventing future occurrences.

In this example, the operator was in violation of existing safety regulations. As with the previous example where an internal company policy was not followed, SMS documentation requirements would either create the objective evidence that the organization is identifying hazards, assessing risk, and mitigating risk as needed, or the lack of proper SMS documentation may demonstrate that the organization is in violation of regulation, including SMS regulatory requirements. The FAA may audit this evidence at any time. The evidence created through the SMS would help the FAA to identify safety-deficient organizations more effectively. Where deficiencies exist, the FAA may take enforcement action; however a single safety incident would not necessarily indicate that an organization is out of compliance with its SMS.

### H. Data Reporting and Protection

In accordance with proposed § 5.94, any organization that identifies a hazard in the operating environment would be required to provide notice of the hazard to the interfacing person or persons identified in the system description, who, to the best of their knowledge, would be able to address the hazard or mitigate the risk.

Title 49 U.S.C. 44735 provides protection from disclosure under the Freedom of Information Act,<sup>69</sup> for certain reports, data, or other information that are submitted to the FAA voluntarily and are not required to be submitted to the Administrator under any other provision of law. Section 44735(b)(4) limits disclosure of "reports, data, or other information produced or collected for purposes of developing and implementing a safety management

<sup>69</sup> See 5 U.S.C. 552(b)(3)(B).

system acceptable to the Administrator.” Section 44735(b)(4) also limits disclosure of “reports, analyses, and directed studies, based in whole or in part on reports, data or other information” related to the development and implementation of a SMS.

The protections of 49 U.S.C. 44735 do not extend to information that is required to be submitted to the FAA.<sup>70</sup> Therefore, if § 5.94 requires that notice of a hazard be submitted to the FAA (because the FAA is an interfacing party), that submission is not protected from disclosure under 49 U.S.C. 44735. However, if that notice of hazard submitted to the FAA contains trade secrets, or confidential commercial or financial information, the FAA must protect the information from public disclosure under 18 U.S.C. 1905 or 5 U.S.C. 552(b)(4). If a person voluntarily shares hazard information with the FAA and such data is not required to be submitted under § 5.94, then such information would be protected from disclosure under section 44735.

The FAA does not control data shared by a person under proposed § 5.94 with other interfacing persons such as other governmental entities or private parties. Certain protections might be available under a private, legally-binding agreement to protect the information (e.g., non-disclosure agreement) amongst the parties sharing the information, or under certain state or local laws or regulations.

Persons that would be subject to § 5.94 may seek legal guidance to determine the most appropriate way to handle and protect data and information submitted to, or received from, interfacing persons. The FAA encourages these persons to assess applicable State legal frameworks to determine how to comply with data sharing, privacy laws, and reporting requirements, and how to best protect the data shared or received. These persons should evaluate whether states afford data sharing and information protection mechanisms through local statutes or regulations, or through other legal or contractual arrangements, such as confidential disclosure agreements. The FAA expects that industry already has agreements or other arrangements with those interfaces they interact with the most to protect their data and prevent unauthorized disclosures.<sup>71</sup> The

<sup>70</sup> As discussed earlier in this preamble, for summaries of confidential employee reports to the FAA that would be required under proposed § 5.71(c), 49 U.S.C. 44735(a)(2) offers statutory protection from disclosure under the Freedom of Information Act, pursuant to 5 U.S.C. 552(b)(3)(B).

<sup>71</sup> As discussed earlier in the preamble, interfaces are often entities like suppliers or companies that

FAA considers that industry would be best able to determine how to effectively share hazard information with interfacing parties.

## VI. Guidance Material

The FAA provides guidance to the industry on potential methods to comply with part 5. Included in the docket for this proposed rule are draft updates to FAA’s existing SMS guidance material, AC 120–92: Safety Management Systems for Aviation Service Providers, and new draft guidance in AC 21–58: Safety Management Systems for Type and Production Certificate Holders.

### A. Guidance for Aviation Service Providers

The FAA is revising AC 120–92: Safety Management Systems for Aviation Service Providers, to provide guidance in meeting the new requirements of part 5, and for all types of certificate holders and LOA holders who would be required to have an SMS under the proposed rule. The draft AC also describes methods of scalability for the service providers to meet the proposed requirements based on their size and the services they provide. Lastly, this draft AC has been updated to include current information and best practices. The AC would continue to support the FAA SMS Voluntary Program participants.

### B. Guidance for Design and Production Approval Holders

The FAA has drafted a new AC 21–58: Safety Management Systems for Type and Production Certificate Holders that would assist part 21 TC and PC holders and applicants in developing and implementing an SMS compliant with the proposed part 5 requirements. This new draft advisory circular is similar to the updated AC 120–92, geared toward the needs of part 21 certificate holders, and is consistent with AC 120–92 to facilitate corporate-wide SMS implementation for part 21 certificate holders that also have other certificates under 14 CFR.

the certificate holder contracts with for services. In these cases, contracts likely already exist, so the need to share hazard information could be added to those existing contracts or included in future contracts. The FAA notes that there are analogous information sharing agreements already present in the aviation industry. For example, an aircraft owner is provided with an Airplane Flight Manual. If the operator finds errors in the manual there is a means to report this to the Original Equipment Manufacturer. The manufacturer may make the change and then send out modifications to all the owners of that type of aircraft, therefore providing a closed loop communication system.

## VII. Regulatory Notices and Analyses

Federal agencies consider impacts of regulatory actions under a variety of executive orders and other requirements. First, Executive Order 12866 and Executive Order 13563 direct that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify the costs. Second, the Regulatory Flexibility Act of 1980 (Pub. L. 96–354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act of 1979 (Pub. L. 96–39) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, this Trade Act requires agencies to consider international standards and, where appropriate, that they be the basis of U.S. standards. Fourth, the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of \$100,000,000 or more (adjusted annually for inflation) in any one year. The current threshold after adjustment for inflation is \$165,000,000, using the most current (2021) Implicit Price Deflator for the Gross Domestic Product. The FAA has provided a detailed RIA in the docket for this rulemaking. This portion of the preamble summarizes the FAA’s analysis of the economic impacts of this rule.

In conducting these analyses, the FAA has determined that this rule: (1) will generate benefits that justify costs; (2) is a “significant regulatory action” as defined in section 3(f) of Executive Order 12866; (3) will have a significant economic impact on a substantial number of small entities; (4) will not create unnecessary obstacles to the foreign commerce of the United States; and (5) will not impose an unfunded mandate on State, local, or tribal governments, or on the private sector.

### A. Regulatory Impact Analysis

In summary, the FAA estimated quantified annualized costs of \$51.3 million using a 7 percent discount rate over a 5-year period of analysis. The costs represent the value of resources needed for regulated entities to develop and implement a safety management system. Mitigation costs to reduce or eliminate any hazards identified by an SMS, which are yet to be identified and



thus unknown, are not included in the analysis. The FAA evaluated benefits qualitatively. The benefits are the value that would result from avoided fatalities, serious injuries, aircraft damage, and investigation costs.

1. Baseline for the Analysis

The baseline for the analysis of incremental benefits and costs of the proposed rule includes existing regulations and standards, existing practices, affected entities, and current risks of aircraft accidents and incidents. The FAA already requires part 121 operators to implement an SMS. The FAA also provides a voluntary SMS program for certificate holders under parts 21, 135, and 145. The SMS voluntary program is based on the requirements in existing part 5. There are over 200 participants in the voluntary program, including 40 participants in active conformance (full implementation of the certificate holder's SMS).<sup>72</sup> In addition, some part 121 operators have covered their part 135 operations and part 145 repair station services under their SMS. Finally, certain aircraft design and production approval holders and certificated repair stations subject to EASA requirements will be required to develop and implement an SMS under that agency's SMS requirements.<sup>73</sup>

The FAA estimated that the proposed rule would apply to approximately 65 holders of both a type certificate and a production certificate for the same product. Also, there are approximately 1,907 part 135 operators that would be required to implement an SMS, which includes 272 entities that also hold an LOA to conduct commercial air tours under § 91.147. Additionally, there are 694 LOA holders operating under § 91.147 that are not associated with a part 135 certificate that would be required to implement an SMS under the proposed rule.

With respect to aircraft accidents, although the risk associated with regularly scheduled commercial air carriers under part 121 in the United States is low, there have been accidents involving fatalities and serious injuries. Under part 135, there has been an average of 43 accidents and 24 fatalities annually from 2015 to 2019, mostly within on-demand operations. There have also been recent fatal accidents of

air tours conducted under § 91.147, an average of 7 accidents and 3 fatalities annually from 2015 to 2019.

2. Benefits

The benefits of the proposed rule would include the value of the reductions in safety risks associated with requiring additional entities to implement SMS. The information available for estimating such benefits includes data on accident consequences, accident investigation reports identifying the probable causes, and information on the values associated with avoiding consequences. The FAA relied largely on aviation accident data from the NTSB for the years 2015 to 2019 (the most recent available at the time of the analysis) and standard values for estimating avoided consequences including fatalities, serious injuries, property damage, and investigation costs.

The FAA evaluated benefits by determining annual average aviation accident consequences, the share of those consequences that could be mitigated under the proposed rule, and probability of mitigation. The FAA determined the share of consequences that could potentially be mitigatable by the rule by looking at the causes of individual accidents. Requiring certain aircraft design and production approval holders (14 CFR part 21) to implement SMS has the potential to mitigate accidents in operations conducted under 14 CFR parts 121, 135, and 91. Requiring part 135 operators and § 91.147 LOA holders to implement SMS has the potential to mitigate accidents in operations under part 135 and § 91.147. The probability of mitigation is uncertain.

The FAA used accident data from 2015 to 2019, focusing on those involving fatalities and serious injuries (1,954 out of 6,718 accidents across parts 91, 121, and 135). The FAA identified 11 accidents of which the risk could have been mitigated by requiring SMS for part 21 approval holders. The FAA also identified 35 part 135 accidents and 4 § 91.147 accidents of which the risk could have been mitigated by the proposed rule. There are a number of uncertainties in the analysis, including that not all accidents indicative of the potential for benefits from the proposed rule may have been identified. In particular, requiring SMS for certain part 21 design and production approval holders will have beneficial impacts beyond domestic operations (*i.e.*, to citizens of foreign countries).

3. Costs

To estimate compliance costs, the FAA developed average onetime SMS development costs and recurring SMS implementation costs. Then, the FAA extrapolated these costs to entities that would fall under the expanded applicability of part 5 who would not already be required to implement an SMS and are not already implementing an SMS voluntarily. To develop these estimates, the FAA conducted limited outreach to industry participants in the FAA's voluntary SMS program to obtain data on implementation costs. In order to properly scale costs for company size, the FAA calculated these costs per employee for certificate holders under part 21 and per aircraft for operators under part 135 and § 91.147. The FAA then extrapolated the costs based on number of employees or number of aircraft. The FAA estimated only minor costs for entities that have already implemented an SMS voluntarily.

There are a number of uncertainties in the analysis, including that costs are based on a small sample. As a result, costs could be lower or higher than estimated. The outreach indicated a high level of variability depending on the individual circumstances of the entity (*e.g.*, existing processes and capabilities). For this analysis, the FAA intends for the estimates to represent an average across entities.

4. Summary

Table 2 provides a summary of annualized and present value costs using 3 percent and 7 percent discount rates.

TABLE 2—SUMMARY OF COSTS  
[Millions \$2021]

Category	Annualized	Present value (5 years)
<b>3% Discount Rate:</b>		
Part 21 .....	\$5.0	\$22.8
Part 135 .....	39.5	180.8
§ 91.147 .....	7.2	33.0
Part 121 .....	0.1	0.3
Total .....	51.7	236.9
<b>7% Discount Rate:</b>		
Part 21 <sup>1</sup> .....	5.0	20.6
Part 135 .....	39.1	160.4
§ 91.147 .....	7.1	29.3
Part 121 .....	0.1	0.3
Total .....	51.3	210.6

n.e. = not estimated.

<sup>1</sup> Based on quantified impacts. Excludes costs of mitigation, which FAA was unable to estimate.

Considering particular uncertainties associated with estimating benefits (*e.g.*, SMS effectiveness), the FAA estimated the number of accident consequences (fatalities, serious injuries, and

<sup>72</sup> See FAA Order 8900.1, Volume 17, Chapter 3, "Safety Management System Voluntary Program".

<sup>73</sup> EASA adopted a rule to require SMS for maintenance organizations (part 145), which will become applicable on December 2, 2022. EASA also adopted a rule for design and production organizations (part 21), which will become applicable on March 7, 2023.

destroyed airplanes) that would have to be avoided for benefits to equal costs. These estimates are based on the estimated costs if mitigation costs are minimal. Although mitigation costs are not included, neither are cost savings, such as from potential efficiency gains. For example, SMS can result in doing things differently but not always more costly.

However, the breakeven analysis is limited for providing insight on the relationship of benefits and costs because net benefits will also depend on the magnitude of mitigation costs, which have not been quantified due to lack of data. Therefore, the FAA also calculates the breakeven level of consequences for an illustrative example of mitigation costs equal to 25 percent of compliance costs. Avoided consequences would need to be higher if mitigation costs are greater than 25 percent of compliance costs. The FAA requests comment and data on the costs of mitigations that could have prevented the accidents described in the analysis.

The breakeven analysis suggests that the proposed rule would break even, across all parts, if an average of four fatalities are avoided annually (5 fatalities in the example assuming mitigation costs are 25 percent of compliance costs). Requiring SMS for certain part 21 design and production approval holders would break even if an average of four serious injuries are avoided annually (5 serious injuries assuming mitigation costs are 25 percent of compliance costs). The SMS requirements for part 135 operators would break even if an average of 3 fatalities are avoided annually (4 fatalities assuming mitigation costs are 25 percent of compliance costs). The SMS requirements for § 91.147 LOA holders would break even if an average of 1 fatality is avoided annually (1 fatality also assuming mitigation costs are 25 percent of compliance costs). The benefits of the proposed rule could also equal costs with other combinations of avoided accident consequences.

#### 5. Regulatory Alternatives

The FAA considered two alternatives to the proposed rule. Each proposed alternative would change the applicability of the requirements for an SMS:

- *Alternative 1:* Extend applicability of part 5 to include most design and

production approval holders under part 21, with some exceptions.

- *Alternative 2:* Exclude from the applicability of part 5 the part 135 operators that use only one pilot-in-command in their operations and the § 91.147 LOA holders that conduct fewer than 100 flights per year.

The FAA considered an alternative to the proposed part 21 applicability based on recommendations from a part 21 SMS Aviation Rulemaking Committee. Under Alternative 1, the SMS requirements would apply beyond holders of both a type and production certificate for the same product and would include most design and production approval holders. This alternative would exclude design and production approval holders of products, articles, or changes to existing type certificated products that are not typically used for carrying passengers or property for compensation or hire. Also, as part of this alternative, the FAA considered a process that would allow design and production approval holders to apply to be excluded from SMS requirements if their article or approved product alteration would have little or no effect on the continued safe flight or landing of the aircraft. Under Alternative 1, the FAA estimated that over 3,000 additional entities would be required to implement SMS. The FAA also estimated that over 3,000 additional entities (not associated with the entities in the previous sentence) would likely apply for an exception from the SMS requirements.

Alternative 1 would increase benefits through SMS implementation by the approximately 3,000 entities who design or produce certain safety-critical parts under any design or production approval. The alternative would also hold entities who design and produce interchangeable safety-critical parts to the same SMS standard required of entities holding both a type certificate and a production certificate for the same product. However, as of the date of this analysis, the FAA was not able to estimate these risks or benefits due to a lack of specific data and lack of certainty at this time.

The FAA estimated that costs could be \$39.4 million for Alternative 1, using a number of assumptions because the agency does not have information for these entities on the size of their

aviation design and production processes. The costs would include SMS development and implementation costs, application costs for an exception to implementing SMS, and FAA review and approval costs. Compared to the proposed rule, the increased costs would be approximately \$34.4 million (annualized using a 7% discount rate).

The FAA considered an alternative for part 135 and § 91.147 that would limit the number of small operators affected. Under Alternative 2, the FAA considered excluding from the applicability of part 5 the part 135 operators that use only one pilot-in-command in their operations and the § 91.147 LOA holders that conduct fewer than 100 flights per year. The FAA estimated that 1,313 part 135 operators would be affected under Alternative 2 compared to 1,907 under the proposed rule. The FAA does not have data on the number of § 91.147 LOA holders that conduct less than 100 flights per year. However, for this analysis, the FAA used LOA holders with one registered aircraft as an estimate of LOA holders that would not be affected under the alternative. The FAA estimated that 321 § 91.147 LOA holders would be affected under Alternative 2 compared to 694 under the proposed rule.

The reduced applicability under Alternative 2 would lower both the benefits and costs. For part 135, costs would be \$3.4 million lower compared to the proposed rule. For § 91.147, costs would be \$1.7 million lower compared to the proposed rule. With respect to benefits, the FAA identified five potentially mitigatable accidents involving operators that use only one pilot-in-command and one potentially mitigatable accident involving a § 91.147 LOA holder with one aircraft registration. These types of operators would not be required to implement an SMS.

Table 3 provides a summary of the analysis of alternatives. The uncertainty associated with the estimation of benefits and costs of the proposal also applies to the estimates of the alternatives. Section V.A., Applicability, of the preamble to the proposed rule provides the agency's rationale for selecting the proposed option.

TABLE 3—SUMMARY OF ALTERNATIVES ANALYSIS

Scenario	Change from proposed rule		
	Affected entities	Benefits	Costs (millions)
<p><i>Alternative 1:</i> Extend applicability to include additional design and production approval holders under part 21.</p> <p><i>Alternative 2:</i> Limit applicability for certain part 135 operators (exclude operators that use only one pilot-in-command) and § 91.147 LOA holders (exclude fewer than 100 flights per year).</p>	<p>SMS: +3,000 .....                      Exception: +3,000.                      Part 135: –594 .....                      § 91.147: –373.</p>	<p>Data not available to quantify change in risk.                      Lower (would not mitigate risks identified in 5 part 135 and 1 § 91.147 accidents).</p>	<p>+\$34.4.                      Part 135: –\$3.4.                      § 91.147: –\$1.7.</p>

Please see the RIA available in the docket for the more details.

*B. Regulatory Flexibility Act*

The Regulatory Flexibility Act (RFA) of 1980, Public Law 96–354, 94 Stat. 1164 (5 U.S.C. 601–612), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121, 110 Stat. 857, Mar. 29, 1996), and the Small Business Jobs Act of 2010 (Pub. L. 111–240, 124 Stat. 2504 Sept. 27, 2010), requires Federal agencies to consider the effects of the regulatory action on small business and other small entities and to minimize any significant economic impact. The term “small entities” comprises small businesses and not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

The FAA is publishing this Initial Regulatory Flexibility Analysis (IRFA) to aid the public in commenting on the potential impacts to small entities from this proposal. The FAA invites interested parties to submit data and information regarding the potential economic impact that would result from the proposal. The FAA will consider comments when making a determination or when completing a Final Regulatory Flexibility Analysis.

An IRFA must contain the following:

- (1) A description of the reasons why the action by the agency is being considered;
- (2) A succinct statement of the objective of, and legal basis for, the proposed rule;
- (3) A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;

(4) A description of the projected reporting, recordkeeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;

(5) An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap, or conflict with the proposed rule; and

(6) A description of any significant alternatives to the proposed rule which accomplish the stated objectives of applicable statutes, and which minimize any significant economic impact of the proposed rule on small entities.

1. Reasons the Action Is Being Considered

As described elsewhere in this preamble, the proposed rule addresses a Congressional mandate as well as recommendations from the NTSB. Additionally, the proposed rule would move the United States closer to harmonizing with ICAO Annex 19. The FAA intends for the proposed rule to improve aviation safety by requiring organizations to implement a proactive approach to managing the safety performance of an organization. The successful use of SMS by part 121 operators suggests potential benefits of expanding SMS into other sectors of the aviation system.

2. Objectives and Legal Basis of the Proposed Rule

The objective of implementing an SMS is to proactively identify hazards, assess the risk of those hazards, and apply effective mitigations before an accident or incident occurs. The proposed rule would expand the use of SMS in the aviation industry by making the SMS requirements applicable to part

135 operators, § 91.147 LOA holders, and certain part 21 design and production approval holders. The proposed rule would also increase the opportunities for communication of identified hazards between part 119 certificate holders, § 91.147 LOA holders, and manufacturers. The proposed rule is therefore intended to increase the overall safety of the national airspace system. Additionally, the proposed rule would fulfill the statutory mandate in section 102 of ACSAA. Section II of this preamble describes the FAA’s authority to issue rules on aviation safety under Title 49 U.S.C. and the Congressional mandate in section 102 of ACSAA.

3. Description and Estimate of the Number of Small Entities

FAA used the definition of small entities in the RFA for this analysis. The RFA defines small entities as small businesses, small governmental jurisdictions, or small organizations. In 5 U.S.C. 601(3), the RFA defines “small business” to have the same meaning as “small business concern” under section 3 of the Small Business Act. The Small Business Act authorizes the Small Business Administration (SBA) to define “small business” by issuing regulations.

SBA has established size standards for various types of economic activities, or industries, under the North American Industry Classification System (NAICS). These size standards generally define small businesses based on the number of employees or annual receipts. Table 4 shows the SBA size standards for example industrial classification codes relevant for the proposed rule. Note that the SBA definition of a small business applies to the parent company and all affiliates as a single entity.

TABLE 4—SMALL BUSINESS SIZE STANDARDS: AIR TRANSPORTATION

NAICS code	Description	Size standard
336411 .....	Aircraft Manufacturing .....	1,500 employees.
336412 .....	Aircraft Engine and Engine Parts Manufacturing .....	1,500 employees.

TABLE 4—SMALL BUSINESS SIZE STANDARDS: AIR TRANSPORTATION—Continued

NAICS code	Description	Size standard
336413	Other Aircraft Part and Auxiliary Equipment Manufacturing	1,250 employees.
481111	Scheduled Passenger Air Transportation	1,500 employees.
481112	Scheduled Freight Air Transportation	1,500 employees.
481211	Nonscheduled Chartered Passenger Air Transportation	1,500 employees.
481212	Nonscheduled Chartered Freight Air Transportation	1,500 employees.
481219	Other Nonscheduled Air Transportation	\$16.5 million.
487990	Scenic and Sightseeing Transportation, Other	\$8.0 million.

NAICS = North American Industrial Classification System.

a. Part 21

As described in the RIA, the FAA estimated that there may be approximately 65 design or production approval holders under part 21 that may need to implement SMS under the proposed rule. Fifteen of these entities are already implementing SMS under the FAA’s voluntary program or are large businesses (based on publicly available information regarding number

of employees). Of the remaining 50 entities, 31 may meet the size standard for a small business in Aerospace Product and Parts Manufacturing (NAICS 33641).

b. Part 135

Approximately 1,907 part 119 certificate holders operating under part 135 would need to implement SMS under the proposed rule. Internal FAA data indicate that all but three of these

certificate holders have fewer than 1,500 employees. Thus, to the extent that the industrial classification of the parent company of these entities is scheduled passenger or freight, or nonscheduled chartered passenger or freight air transportation (NAICS 481111, 481112, 481211, or 481212), over 1,900 would be small businesses. Table 5 shows the distribution of certificate holders by total employment.

TABLE 5—DISTRIBUTION OF PART 135 EMPLOYMENT

Number of employees	Number of certificate holders	Percent of certificate holders
1	292	15
2–9	877	46
10–19	275	14
20–49	264	14
50–99	106	6
100–499	76	4
500–999	13	1
1000+	4	0

Source: FAA data as of March 2021.

c. Section 91.147

Approximately 694 air tour operators would have to implement SMS under the proposed rule. To the extent that the industrial classification of the parent company of these entities is Scenic and Sightseeing Transportation, Other, the relevant size standard is \$8.0 million. Internal FAA data does not include revenue or number of flights for these operations. However, 362 of these LOA holders have only one aircraft listed on the LOA. Many may meet the small business size standard. The FAA requests data and information that may enable determination of whether these air tour operators would meet the SBA small size threshold.

4. Projected Reporting, Recordkeeping, and Other Compliance Requirements

Section V.C.4 of this preamble discusses the reporting requirements of the proposed rule. Affected entities who identify a hazard in their operating environment must provide notice of the hazard to the interfacing person or

persons who would best be able to address the hazard or mitigate the risk.

Section V.C.5 of this preamble describes the recordkeeping requirements of the proposed rule. Affected entities must maintain records of the outputs of safety risk management and safety assurance processes for as long as they remain relevant to the operation. In addition, entities must retain outputs of safety assurance processes for a minimum of 5 years, SMS training records for as long as the individual is employed by the person, and communication records for a minimum of 24 months.

Recordkeeping and reporting requirements, like the rest of part 5, are scalable to a wide variety of business models and sizes, as discussed in Section V.F. of this preamble. As a result, entities could potentially accomplish the recordkeeping and reporting requirements through the use of existing personnel rather than require additional professional skills.

Section V.C of the preamble describes the primary requirements for an SMS, which include safety policy, safety risk management, safety assurance, and safety promotion, as well as documentation. As described in the RIA, the FAA estimated the cost of compliance with all the proposed requirements based on number of employees for part 21 certificate holders and based on fleet size for part 135 operators and § 91.147 LOA holders. Table 6 and Table 7 provide the results for example size categories and expressed as a percentage of overall average receipts (using NAICS 336411 for part 21 and 336411 for part 135 as examples).<sup>74</sup> Not included in the costs

<sup>74</sup> The ratios are similar using NACIS 336412 and 336413 for part 21 and 481112, 481113, 481211, 481212, and 481213 for part 135. For § 91.147, the FAA does not have number of employees associated with the number of aircraft on the LOA. However, assuming LOA holders of 1 and 2 registered aircraft have less than 5 employees, the ratios for one-time and annual costs as a percentage of inflation adjusted receipts in this smallest employment size

are mitigation costs which are yet unknown. The RIA provides additional detail on the cost estimates.

unknown. The RIA provides additional detail on the cost estimates.

TABLE 6—EXAMPLE SMS COMPLIANCE COSTS BY NUMBER OF EMPLOYEES: PART 21

Number of employees	One-time cost	Annual cost	One-time cost/receipts <sup>1</sup> (%)	Annual cost/receipts <sup>1</sup> (%)
1–99 .....	\$7,500–\$26,050	\$500–\$10,130	0.2–1.2	0.1–0.1
100–499 .....	26,320–131,320	10,230–51,050	0.2–1.2	0.1–0.5
500–10,000 .....	131,580–2,631,590	51,150–1,023,000	0.03–0.1	0.01–0.04

<sup>1</sup> Source for receipts: 2017 County Business Patterns and Economic Census ([https://www2.census.gov/programs-surveys/susb/tables/2017/us\\_state\\_naics\\_detailedsizes\\_2017.xlsx](https://www2.census.gov/programs-surveys/susb/tables/2017/us_state_naics_detailedsizes_2017.xlsx)). Adjusted for inflation using the Consumer Price Index. Based on NAICS 336411.

TABLE 7—EXAMPLE SMS COMPLIANCE COSTS BY NUMBER OF AIRCRAFT: PART 135 AND 91.147

Number of aircraft	One-time cost	Annual cost	One-time cost/receipts <sup>1</sup> (%)	Annual cost/receipts <sup>1</sup> (%)
1–9 .....	\$7,500–\$38,120	\$4,380–\$39,420	0.1–0.7	0.1–0.4
10–49 .....	42,360–207,560	43,800–214,640	0.1–0.9	0.1–0.9
50–99 .....	211,800–419,370	219,020–433,670	0.2–0.9	0.2–0.9
100–500 .....	423,600–2,118,010	438,050–2,190,230	0.2–0.3	0.2–0.3

<sup>1</sup> Source for receipts: 2017 County Business Patterns and Economic Census ([https://www2.census.gov/programs-surveys/susb/tables/2017/us\\_state\\_naics\\_detailedsizes\\_2017.xlsx](https://www2.census.gov/programs-surveys/susb/tables/2017/us_state_naics_detailedsizes_2017.xlsx)). Adjusted for inflation using the Consumer Price Index. Based on NAICS 481111 and median number of employees per number of aircraft for part 135 operators.

Total annualized costs (using a 7 percent discount rate) for small businesses may be in the range of \$0.3 million for part 21 and \$37.4 million for part 135. The FAA does not have data to identify § 91.147 LOA holders that may meet the size standard. However, total annualized costs for this sector are \$7.1 million.

Although the proposed requirements are scalable to fit the size or complexity of the organization, any adverse impacts of compliance costs could disproportionately fall on small entities. Like large entities, small entities will likely pass the costs on in the form of price increases.

5. All Federal Rules That May Duplicate, Overlap, or Conflict

There are no relevant Federal rules that may duplicate, overlap, or conflict with the proposed rule.

6. Significant Alternatives Considered

The FAA considered extending the applicability of part 5 to include most design and production approval holders under part 21, with some exceptions. Compared to the proposed option, the FAA estimated that more than an additional 3,000 entities would need to implement an SMS and more than 3,000 would likely apply for an exception under this alternative. To the extent that

category in NAICS 487990 would be 1.8% and 1.1%, respectively.

the industrial classification of these entities is in aircraft manufacturing, the industry data in Table 2 suggests that a large percentage are likely small businesses (*i.e.*, given at least 92 percent of this sector meet the size standard).

The FAA considered excluding from the SMS certificate holders under part 135 that use only one pilot-in-command in their operations and § 91.147 LOA holders that conduct less than 100 flights per year. This alternative would reduce affected part 135 operators by 31 percent and § 91.147 LOA holders by 54 percent. For part 135, costs would be \$3.4 million lower compared to the proposed rule. For § 91.147, costs would be \$5.9 million lower compared to the proposed rule. However, the alternative would also reduce benefits. The FAA identified five potentially mitigatable accidents involving operators that use only one pilot-in-command and one potentially mitigatable accident involving a § 91.147 LOA holder with one aircraft registration. These types of operators would not be required to implement an SMS.

C. International Trade Impact Assessment

The Trade Agreements Act of 1979 (Pub. L. 96–39), as amended by the Uruguay Round Agreements Act (Pub. L. 103–465), prohibits Federal agencies

<sup>75</sup> The FAA notes that because this proposed rule would not apply to products where the state of manufacture is not the United States, aircraft manufacturers who are manufacturing abroad

from establishing standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Pursuant to these Acts, the establishment of standards is not considered an unnecessary obstacle to the foreign commerce of the United States, so long as the standard has a legitimate domestic objective, such as the protection of safety, and does not operate in a manner that excludes imports that meet this objective. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. The FAA has assessed the potential effect of this rule and determined that it will improve aviation safety and does not exclude imports that meet this objective.<sup>75</sup> As a result, the FAA does not consider this rule as creating an unnecessary obstacle to foreign commerce.

D. Unfunded Mandates Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of \$100 million or more (in 1995 dollars) in any one year by State, local, and tribal governments, in the

would not be required to have an SMS under part 5 but may have SMS requirements imposed by the state of manufacture.

aggregate, or by the private sector; such a mandate is deemed to be a “significant regulatory action.” The FAA currently uses an inflation-adjusted value of \$165 million in lieu of \$100 million. An unfunded mandate is a regulation that requires a State, local, or tribal government or the private sector to incur direct costs without the Federal government having first provided the funds to pay those costs. The FAA determined that the proposed rule will not result in the expenditure of \$165,000,000 or more by State, local, or tribal governments in the aggregate, or the private sector, in any one year.<sup>76</sup> Therefore, the requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply.

#### *E. Paperwork Reduction Act*

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires that the FAA consider the impact of paperwork and other information collection burdens imposed on the public. According to the 1995 amendments to the Paperwork Reduction Act (5 CFR 1320.8(b)(2)(vi)), an agency may not collect or sponsor the collection of information, nor may it impose an information collection requirement unless it displays a valid Office of Management and Budget (OMB) control number.

This proposed rule contains new information collection requirements and amendments to the existing information collection requirements previously approved under OMB Control Number 2120–0675. As required by the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)), the FAA has submitted these proposed information collection amendments to OMB for its review.

#### 1. Summary

In this rule, the FAA is proposing to require that all certificate holders operating under part 135, all LOA holders operating under § 91.147, and certain certificate holders under part 21

<sup>76</sup> The Unfunded Mandates Reform Act of 1995 defines “Federal private sector mandate” as “any provision in legislation, statute, or regulation that . . . would impose an enforceable duty upon the private sector . . . or would reduce or eliminate the amount of authorization of appropriations for Federal financial assistance that will be provided to the private sector for the purposes of ensuring compliance with such duty.” Public Law 104–4 section 658 (1995).

establish an SMS to improve safety for their operations, and to amend the requirements for certificate holders operating under part 121.<sup>77</sup> An SMS is a formalized approach to managing safety by developing an organization-wide safety policy, developing formal methods for identifying hazards, analyzing and mitigating risk, developing methods for ensuring continuous safety improvement, and creating organization-wide safety promotion strategies.

Under this proposed rule, certificate and authorization holders required to comply would be burdened with the following information collection activities:<sup>78</sup>

(1) Develop a system description—§ 5.5(b)(1).

(2) Revise and maintain the system description to reflect changes in the organization—§ 5.5(b)(2).

(3) Submit the revisions of the SMS to meet the requirements of §§ 5.5(b), 5.21(a)(7), 5.53(b)(5), 5.94, 5.95(c), and 5.97(d) for FAA-acceptance in a form and manner acceptable to the Administrator—§ 5.7(a)(2).

(4) Submit a statement of compliance in a form and manner acceptable to the Administrator—§ 5.7(b)(2) and § 5.9(a)(2).

(5) Submit an implementation plan in accordance with § 5.17 of this subpart for FAA approval in a form and manner acceptable to the Administrator—§ 5.11(b) and § 5.13(b)(2).

(6) Any person required to have an SMS under this part to have a safety policy—§ 5.21(a).

(7) Any person that holds both a type certificate and a production certificate for the same product issued under part 21 of this chapter must submit a summary of the confidential employee reports received under § 5.71(a)(7) to the Administrator every 6 months—§ 5.71(c).

(8) If a person identifies a hazard in the operating environment, the person must provide notice of the hazard to the interfacing person or persons identified in the system description who, to the best of their knowledge, could address

<sup>77</sup> Proposed part 121 requirements would be amended in the corresponding OMB Control Number 2120–0675.

<sup>78</sup> Proposed part 121 requirements not reflected in corresponding OMB Control Number 2120–0675 are system description and notification of hazards.

the hazard or mitigate the risk—§ 5.94(a); any person required to have an SMS under this part to develop and maintain procedures for reporting and receiving hazard information—§ 5.94(b).

(9) Any person required to have an SMS under this part to develop and maintain SMS documentation containing (a) safety policy, (b) SMS processes and procedures, (c) system description—§ 5.95.

(10) Any person required to have an SMS under this part to maintain SMS records: (a) records of outputs of safety risk management processes for as long as the control remains relevant to the operation, (b) records of outputs of safety assurance processes for a minimum of 5 years, (c) records of all training provided under § 5.91 for each individual for as long as the individual is employed by the person, (d) records of all communications provided under § 5.93 or § 5.94 for a minimum of 24 consecutive calendar months—§ 5.97.

#### 2. Use

The information collection will be used to provide a basis for the FAA’s review during the development and implementing phases, used by the certificate or LOA holder in its SMS processes and procedures, and used to demonstrate compliance with the part 5 requirements.

Collection and analysis of safety data is an essential part of an SMS. Types of data to be collected, retention procedures, analysis processes, and organizational structures for review and evaluation will be documented in the SMS. These records will be used by a certificate holder or LOA holder in the operation of its SMS and to facilitate continuous improvement through evaluation and monitoring. While this proposed rule does not require a certificate holder or LOA holder to submit these records to the FAA, it would require a certificate holder or LOA holder to make these records available upon request.

#### 3. Respondents (Including Number of)

Table 8 provides the FAA’s estimates of the number of respondents by affected entity category (by part 121 approval holders, part 135 operators, and § 91.147 LOA holders) that would be impacted by the paperwork requirements in this rule.

TABLE 8—NUMBER OF RESPONDENTS

Affected entity category	Number of respondents
<i>System Description:</i>	
Part 21 .....	65
Part 135 .....	1,907
§91.147 .....	694
Part 121 .....	66
Total .....	2,732
<i>Statement of compliance:</i>	
Part 135 .....	1,907
§91.147 .....	694
Part 121 <sup>1</sup> .....	1
Total .....	2,602
<i>Implementation plan:</i>	
Part 21 .....	65
<i>Safety policy:</i>	
Part 21 .....	65
Part 135 .....	1,907
§91.147 .....	694
Total .....	2,666
<i>Summary of employee reports:</i>	
Part 21 .....	65
<i>Notification of hazards:</i>	
Part 21 .....	65
Part 135 .....	1,907
§91.147 .....	694
Part 121 .....	66
Total .....	2,732
<i>SMS documentation:</i>	
Part 21 .....	65
Part 135 .....	1,907
§91.147 .....	694
Total .....	2,666
<i>SMS records:</i>	
Part 21 .....	65
Part 135 .....	1,907
§91.147 .....	694
Total .....	2,666

<sup>1</sup> Estimate based on one new 121 operator over last 3 years. Not applicable to existing 121 operators.

4. Frequency

The frequency of new information collection requirements and amendments to the existing information collection requirements is shown below

in Table 13 with the annual burden estimate for each.

5. Annual Burden Estimate

The FAA estimated the paperwork burden for up to 2,732 certificate and approval holders impacted by the rule as shown below in Table 9.

TABLE 9—PAPERWORK BURDEN

Category	Number of respondents	Frequency of response <sup>1</sup>	Total number of responses	Burden hours <sup>2</sup>	Costs (millions) <sup>3</sup>
<i>System Description:</i>					
Part 21 .....	65	1	65	520	\$0.05
Part 135 .....	1,907	1	1,907	15,256	1.36
§91.147 .....	694	1	694	5,552	0.49
Part 121 .....	66	1	66	528	0.05
Total .....	2,732	NA	2,732	21,856	1.94
<i>Statement of compliance:</i>					
Part 135 .....	1,907	3	5,721	61,024	5.43
§91.147 .....	694	3	2,082	22,208	1.98
Part 121 .....	1	3	3	32	0.00
Total .....	2,602	NA	7,806	83,264	7.41

TABLE 9—PAPERWORK BURDEN—Continued

Category	Number of respondents	Frequency of response <sup>1</sup>	Total number of responses	Burden hours <sup>2</sup>	Costs (millions) <sup>3</sup>
<i>Implementation plan:</i>					
Part 21 .....	65	3	195	2,080	0.19
<i>Safety policy:</i>					
Part 21 .....	65	1	65	260	0.02
Part 135 .....	1,907	1	1,907	7,628	0.68
§91.147 LOA .....	694	1	694	2,776	0.25
Total .....	2,666	NA	2,666	10,664	0.94
<i>Summary of employee reports:</i>					
Part 21 .....	65	6	390	1,560	0.14
<i>Notification of hazards:</i>					
Part 21 .....	65	3	195	1,560	0.14
Part 135 .....	1,907	3	5,721	45,768	4.07
§91.147 .....	694	3	2,082	16,656	1.48
Part 121 .....	66	3	198	1,584	0.14
Total .....	2,732	NA	8,196	65,568	5.83
<i>SMS documentation:</i>					
Part 21 .....	65	3	195	2,080	0.19
Part 135 .....	1,907	3	5,721	61,024	5.43
§91.147 .....	694	3	2,082	22,208	1.98
Total .....	2,666	NA	7,998	85,312	7.59
<i>SMS records:</i>					
Part 21 .....	65	3	195	1,560	0.14
Part 135 .....	1,907	3	5,721	45,768	4.07
§91.147 .....	694	3	2,082	16,656	1.48
Total .....	2,666	NA	7,998,2791	63,984	5.69

NA = not applicable.

<sup>1</sup> Frequency over three-year period.

<sup>2</sup> Calculated as number of respondents × hours per respondent.

<sup>3</sup> Calculated as burden hours × average labor rate including benefits. The FAA used an average wage including benefits of \$88.97, which is the mean average wage for aerospace engineers (\$59.12) divided by the percent of total employer costs of employee compensation represented by wages (66%) to account for benefits (34%). Wages and benefits information available at: <https://www.bls.gov/oes/current/oes172011.htm> and [https://www.bls.gov/news.release/ecec.t04.htm#ect\\_table4.f.1](https://www.bls.gov/news.release/ecec.t04.htm#ect_table4.f.1).

Table 10 provides a summary of the implied annual responses and burden (total divided by three).

TABLE 10—SUMMARY OF ANNUAL BURDEN<sup>1</sup>

Category	Reporting	Recordkeeping	Disclosure
<i>System description:</i>			
Number of respondents .....	911	0	0
Number of responses per respondent .....	0.3	0	0
Time per response (hours) .....	3	0	0
Total number of responses .....	911	0	0
Total burden (hours) .....	7,285	0	0
<i>Statement of compliance:</i>			
Number of respondents .....	2,602	0	0
Number of responses per respondent .....	1	0	0
Time per response (hours) .....	10.7	0	0
Total number of responses .....	2,602	0	0
Total burden (hours) .....	27,755	0	0
<i>Implementation plan:</i>			
Number of respondents .....	65	0	0
Number of responses per respondent .....	1	0	0
Time per response (hours) .....	10.7	0	0
Total number of responses .....	65	0	0
Total burden (hours) .....	693	0	0
<i>Safety policy:</i>			
Number of respondents .....	0	889	0
Number of responses per respondent .....	0	0.3	0
Time per response (hours) .....	0	1.3	0
Total number of responses .....	0	889	0
Total burden (hours) .....	0	3,555	0



TABLE 10—SUMMARY OF ANNUAL BURDEN <sup>1</sup>—Continued

Category	Reporting	Recordkeeping	Disclosure
<i>Summary of employee reports:</i>			
Number of respondents .....	65	0	0
Number of responses per respondent .....	2	0	0
Time per response (hours) .....	4	0	0
Total number of responses .....	130	0	0
Total burden (hours) .....	520	0	0
<i>Notification of hazards:</i>			
Number of respondents .....	2,732	0	0
Number of responses per respondent .....	1	0	0
Time per response (hours) .....	8	0	0
Total number of responses .....	2,732	0	0
Total burden (hours) .....	21,856	0	0
<i>SMS documentation:</i>			
Number of respondents .....	0	2,666	0
Number of responses per respondent .....	0	1	0
Time per response (hours) .....	0	10.7	0
Total number of responses .....	0	2,666	0
Total burden (hours) .....	0	28,437	0
<i>SMS records:</i>			
Number of respondents .....	0	2,666	0
Number of responses per respondent .....	0	1	0
Time per response (hours) .....	0	8	0
Total number of responses .....	0	2,666	0
Total burden (hours) .....	0	21,328	0

The agency is soliciting comments to—

(a) Evaluate whether the proposed information requirement is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(b) Evaluate the accuracy of the agency’s estimate of the burden;

(c) Enhance the quality, utility, and clarity of the information to be collected; and

(d) Minimize the burden of collecting information on those who are to respond, including by using appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

Individuals and organizations may send comments on the information collection requirement to the address listed in the **ADDRESSES** section at the beginning of this preamble by March 13, 2023. Comments also should be submitted to the Office of Management and Budget, Office of Information and Regulatory Affairs, Attention: Desk Officer for FAA, New Executive Building, Room 10202, 725 17th Street NW, Washington, DC 20053.

*F. International Compatibility*

ICAO Annex 19 establishes an SMS Framework for managing aviation safety risk, as well as identifies the types of organizations that should implement an SMS. This rulemaking would move the United States closer to harmonization with ICAO Annex 19. The proposed rule would align with Annex 19 by requiring

the following service providers to implement SMS: (1) commercial operators of airplanes or helicopters, and (2) certain organizations responsible for the design or manufacture of products. The FAA has already implemented SMS across the FAA’s Air Traffic Organization.<sup>79</sup> Additionally, the FAA is proposing SMS implementation for certain airports through a separate rulemaking effort. Both of these efforts bring us closer to alignment with ICAO Annex 19 because Annex 19 also includes air traffic service providers and airports.

When part 5 was originally constructed, it was based on the SMS framework in ICAO Annex 19. Part 5 currently also includes requirements for recordkeeping, which are not part of the ICAO’s SMS framework. However, recordkeeping requirements facilitate FAA’s oversight functions, and they assist the person implementing SMS in demonstrating compliance with the regulations. In addition, the proposed rule would require the use of a system description and the communication of information regarding safety hazards. While these requirements are not in the ICAO’s SMS framework, the FAA believes that they are beneficial to the persons implementing SMS and consistent with ICAO’s intent as ICAO notes in Annex 19 that other organizations that interface with a

product or service provider can make a significant contribution to the safety of its products or services.

1. Air Carriers and Operators

The ICAO SMS requirements for commercial operators are contained in Annex 19, but Annex 6 defines the scope of the requirements. Part I of Annex 6 covers international commercial operations in airplanes. This part of Annex 6 makes no distinction in its requirements on the basis of an organization’s size. The Annex applies to all commercial air transportation operations in airplanes. In the United States, this includes operators certificated under both part 121 and part 135. Part III of Annex 6 covers commercial air transportation operators of helicopters. In the United States, these operations are conducted under part 135. Annex 6, part I addresses international flight operations; in the United States, these international flights are operated under either part 121 or part 135. The FAA currently requires part 121 operators to implement and maintain an SMS, and this proposed rule would extend the requirement for an SMS to part 135 operators, further harmonizing the United States with ICAO’s SMS requirements.

2. Aircraft Design and Manufacturing

ICAO Annex 19 requires SMS for organizations responsible for the type design or manufacture of aircraft, engines, or propellers. This proposal extends part 5 applicability to holders of

<sup>79</sup> More information regarding the Air Traffic Organization’s SMS is available at: [https://www.faa.gov/about/initiatives/sms/specifics\\_by\\_aviation\\_industry\\_type/air\\_traffic](https://www.faa.gov/about/initiatives/sms/specifics_by_aviation_industry_type/air_traffic).

both a TC and a PC for the same product, applicants for a PC where the applicant is the holder or licensee of the TC, and holders of a TC who allow other persons to use their TC to obtain a PC. This proposal would bring the United States into closer harmonization with the ICAO Annex 19 SMS requirement for certain organizations responsible for design or manufacturing of products.

### 3. Development and Implementation of SMS by Foreign Jurisdictions

Many States have made significant progress in developing, implementing, and maintaining requirements for SMS, aligned with ICAO's SMS framework, including certificating authorities in Europe (EASA), Canada, Brazil, the United Kingdom, Japan, and Australia. Of those authorities, most have SMS requirements for international commercial operations, and some have SMS requirements for design and manufacturing. Most that do not have SMS requirements for design and manufacturing plan to adopt such requirements in the future. Several States also have SMS requirements for other operations in the aviation system: airports, maintenance organizations, training organizations, international general aviation operations, and for safety data collection, protection, and exchange.

Harmonization of requirements, to the extent feasible, is important to reduce the regulatory burden on those holding certificates or authorizations from multiple States. The FAA continues to work with other States to harmonize SMS requirements. The proposed rule aligns with sections of the ICAO SMS framework and furthers harmonization with other States requiring SMS. United States-based certificate holders providing products or services internationally could be limited or asked to provide duplicative information to other States' approval authorities to show compliance with in-country SMS requirements. If adopted as proposed, the rule would reduce the regulatory burden on those holding certificates or authorizations across multiple States.

### 4. Other FAA Support for Harmonization and Standards Development

The FAA is a founding member and active participant in the Safety Management International Collaboration Group, a group representing 18 international regulatory authorities. The primary purpose of the Safety Management International Collaboration Group is to promote international harmonization of SMS regulations,

guidance material, and oversight strategies. The FAA is also an active participant on the ICAO Safety Management Panel.

The FAA also participated with the Aerospace Industries Association to develop an international industry standard for SMS: "Implementing a Safety Management System in Design, Manufacturing and Maintenance Organizations." This Standard is intended to enable the aviation industry to implement an SMS consistent with the ICAO Annex 19 "Safety Management" Second Edition, Appendix 2.

### G. Environmental Analysis

FAA Order 1050.1F identifies FAA actions that are categorically excluded from preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act in the absence of extraordinary circumstances. The FAA has determined this rulemaking action qualifies for the categorical exclusion identified in paragraph 5–6.6f for regulations and involves no extraordinary circumstances.

### H. Regulations Affecting Intrastate Aviation in Alaska

Section 1205 of the FAA Reauthorization Act of 1996 (110 Stat. 3213) requires the Administrator, when modifying regulations in 14 CFR in a manner affecting intrastate aviation in Alaska, to consider the extent to which Alaska is not served by transportation modes other than aviation, and to establish appropriate regulatory distinctions. Because this proposed rule would apply to: (1) any person authorized to conduct operations under part 135, (2) any person operating under an LOA issued under § 91.147, and (3) holders of both a TC and a PC for the same product, as well as applicants for a PC where the applicant is the holder or licensee of the TC, it could, if adopted, affect intrastate aviation in Alaska. The use of SMS would improve aviation safety in Alaska. The FAA analyzed NTSB part 135 accident data from 2015 to 2019 and found that of all part 135 air carrier accidents studied, 43 percent of these accidents occurred in Alaska. Because implementation of SMS can be scaled to the size and complexity of an organization, SMS requirements would not be overly burdensome for smaller part 135 operators. The increase in safety benefits to intrastate operations in Alaska would positively impact air commerce in Alaska with the same requirements applicable to every organization under part 5. The FAA

specifically requests comments on whether there is justification for applying the proposed rule differently in intrastate operations in Alaska.

## VIII. Executive Order Determinations

### A. Executive Order 13132, Federalism

The FAA has analyzed this proposed rule under the principles and criteria of Executive Order 13132, Federalism. The agency has determined that this action would not have a substantial direct effect on the States, or the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, and, therefore, would not have Federalism implications.

### B. Executive Order 13211, Regulations That Significantly Affect Energy Supply, Distribution, or Use

The FAA analyzed this proposed rule under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (May 18, 2001). The agency has determined that it would not be a "significant energy action" under the executive order and would not be likely to have a significant adverse effect on the supply, distribution, or use of energy.

### C. Executive Order 13609, International Cooperation

Executive Order 13609, Promoting International Regulatory Cooperation, promotes international regulatory cooperation to meet shared challenges involving health, safety, labor, security, environmental, and other issues and to reduce, eliminate, or prevent unnecessary differences in regulatory requirements. The FAA has analyzed this action under the policies and agency responsibilities of Executive Order 13609, and has determined that this action may improve regulatory cooperation by moving FAA requirements for SMS closer to ICAO Standards and Recommended Practices that other States are adopting or considering adopting.

## IX. Additional Information

### A. Comments Invited

The FAA invites interested persons to participate in this rulemaking by submitting written comments, data, or views. The agency also invites comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. The most helpful comments reference a specific portion of the proposal, explain

the reason for any recommended change, and include supporting data. To ensure the docket does not contain duplicate comments, commenters should send only one copy of written comments, or if comments are filed electronically, commenters should submit only one time.

The FAA will file in the docket all comments it receives, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. Before acting on this proposal, the FAA will consider all comments it receives on or before the closing date for comments. The FAA will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. The agency may change this proposal considering the comments it receives.

### *B. Confidential Business Information*

Confidential Business Information (CBI) is commercial or financial information that is both customarily and actually treated as private by its owner. Under the FOIA (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing Confidential Business Information should be sent to the person in the **FOR FURTHER INFORMATION CONTACT** section of this document. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

### *C. Request for Comments*

In the preamble under Section V., Discussion of the Proposal, the FAA requested comments pertaining to specific issues. To facilitate submission of public comments, the specific requests for comments are also listed below. When responding to the comments, please identify the issue by using the question numbers used here:

(1) The FAA requests comment regarding how SMS might present unique opportunities or challenges for smaller organizations.

(2) The FAA is aware that there are 135 operators that use only one pilot-in-

command in their operations, as well as § 91.147 LOA holders with low flight volume. The FAA seeks supporting information and data regarding whether this applicability should be limited to a certain subset of part 135 operators and § 91.147 LOA holders, and if so, how? If the applicability is limited to a particular subset of part 135 operators and § 91.147 LOA holders, please provide any recommendations for alternatives that would achieve the same safety objectives as SMS for those operators that would not be included under SMS.

(3) The FAA considers that there may be safety benefits to applying SMS to a larger portion of the aviation industry that could lead to safety improvements in the aviation ecosystem as a whole. The FAA invites comments as to whether part 5 should apply to all holders of a TC, PC, supplemental type certificates, technical standard order authorizations, or parts manufacturer approvals. The FAA requests that comments specify whether any exceptions should be made in the event that the FAA extends part 5 to these design and production approval holders, and what those exceptions should entail. The FAA further requests information and data related to the safety benefits or impact of applying part 5 to additional design and production approval holders beyond the applicability in this proposed rule.

(4) Under § 5.15(a), the FAA is proposing that any person that holds a TC for a product who allows another person to use the TC to manufacture a product under a PC to be required to submit an implementation plan for FAA approval in a form and manner acceptable to the Administrator no later than December 27, 2024, and implement the SMS in accordance with the FAA-approved plan no later than December 27, 2025. These proposed compliance dates are consistent with the proposal under § 5.11 for holders with a TC and a PC for the same product issued under part 21. The FAA invites comments about whether the FAA should extend the compliance timelines for persons who license their TC to other persons and, if so, what timelines the FAA should establish. The FAA requests that responsive comments include the commenter's rationale.

(5) The FAA seeks comment on whether organizations can share information about hazards without disclosing proprietary information. The FAA also seeks comment on whether the holder of the proprietary information would be in the best position to address the hazard. Please provide examples of any situations in

which the holder of proprietary information would not be able to share information about a hazard without disclosing that proprietary information

(6) The FAA seeks comments regarding the Annual Burden Estimate for the Paperwork Reduction Act to—

(a) Evaluate whether the proposed information requirement is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(b) Evaluate the accuracy of the agency's estimate of the burden;

(c) Enhance the quality, utility, and clarity of the information to be collected; and

(d) Minimize the burden of collecting information on those who are to respond, including by using appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

(7) Is there data or other evidence of the effectiveness of SMS in mitigating accidents and incidents?

(8) Appendix A of the RIA lists the accidents that inform the RIA and includes the FAA's assessment of the effectiveness of SMS mitigating the accident as well as the FAA's rationale:

(a) Has the FAA accurately estimated the most likely effectiveness of mitigation of any specific accidents through the proposed rule? Please provide any data or analysis to support your assessment.

(b) Does the FAA's rationale accurately assess how the use of an SMS would potentially mitigate the hazards that caused the accidents?

(c) What would be a reasonable intervention to mitigate the specific hazards identified, and what would be a reasonable estimation for the cost of the intervention or mitigation? Please provide data or analysis to support your response.

(d) Are there additional accidents or incidents that SMS could have meaningfully mitigated?

(9) The FAA seeks comments and information regarding expanding the applicability of part 5 in the future. Should the FAA consider a future rulemaking project to expand the applicability of part 5 to include repair stations certificated under part 145? Repair stations perform a wide range of repair and maintenance work on an equally wide range of aircraft and components. Some repair stations do not perform work on aircraft used for passenger-carrying operations. Should the FAA consider applying part 5 to all certificated part 145 repair stations? Should applicability be limited to a subset of part 145 repair stations? The

FAA seeks information and supporting data regarding how the applicability should be limited to a subset (*i.e.*, to which repair stations should part 5 be applicable).

#### *D. Availability of Rulemaking Documents*

An electronic copy of rulemaking documents may be obtained from the internet by—

1. Searching the Federal eRulemaking Portal at [www.regulations.gov](http://www.regulations.gov);

2. Visiting the FAA's Regulations and Policies web page at [www.faa.gov/regulations\\_policies/](http://www.faa.gov/regulations_policies/); or

3. Accessing the Government Printing Office's web page at [www.GovInfo.com](http://www.GovInfo.com).

Copies may also be obtained by sending a request to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue SW, Washington, DC 20591, or by calling (202) 267-9677. Commenters must identify the docket or notice number of this rulemaking.

All documents the FAA considered in developing this proposed rule, including economic analyses and technical reports, may be accessed from the internet through the Federal eRulemaking Portal referenced in item (1) above.

#### **List of Subjects**

##### *14 CFR Part 5*

Air carriers, Aircraft, Airmen, Aviation safety, Reporting and recordkeeping requirements, Safety, Transportation.

##### *14 CFR Part 21*

Aircraft, Aviation safety, Exports, Imports, Reporting and recordkeeping requirements.

##### *14 CFR Part 91*

Air carriers, Air taxis, Aircraft, Airmen, Aviation safety, Charter flights, Reporting and recordkeeping requirements.

##### *14 CFR Part 119*

Administrative practice and procedure, Air carriers, Aircraft, Aviation safety, Charter flights, Reporting and recordkeeping requirements.

##### *14 CFR Part 121*

Air carriers, Aircraft, Aviation safety, Charter flights, Reporting and recordkeeping requirements, Safety, Transportation.

##### *14 CFR Part 135*

Air taxis, Aircraft, Airmen, Aviation safety, Reporting and recordkeeping requirements.

#### **The Proposed Amendment**

In consideration of the foregoing, the Federal Aviation Administration proposes to amend chapter I of title 14, Code of Federal Regulations as follows:

#### **PART 5—SAFETY MANAGEMENT SYSTEMS**

■ 1. The authority citation for part 5 is revised to read as follows:

**Authority:** 49 U.S.C. 106(f), 106(g), 40101, 40113, 40119, 41706, 44101, 44701–44702, 44705, 44709–44711, 44713, 44716–44717, 44722, 46105; Sec. 102, Pub. L. 116–260, 134 Stat. 2309; Sec 215, Pub. L. 111–216, 124 Stat. 2366.

■ 2. Revise Subpart A to read as follows

#### **Subpart A—General**

Sec.

5.1 Applicability.

5.3 Definitions.

5.5 General requirements.

5.7 Requirements for domestic, flag, and supplemental operations.

5.9 Requirements for commuter and on-demand operations or passenger carrying flights for compensation or hire.

5.11 Requirements for certificate holders with both type certificates and production certificates.

5.13 Requirements for type certificate holders or licensees applying for a production certificate for the same product.

5.15 Requirements for type certificate holders who allow another person to use the type certificate to obtain a production certificate for the same product.

5.17 Implementation plan.

#### **Subpart A—General**

##### **§ 5.1 Applicability.**

This part applies to all of the following:

(a) Any person that holds or applies for a certificate issued under part 119 of this chapter authorizing the person to conduct operations under part 121 of this chapter.

(b) Any person that holds or applies for a certificate issued under part 119 of this chapter authorizing the person to conduct operations under part 135 of this chapter.

(c) Any person that holds or applies for a Letter of Authorization issued under § 91.147 of this chapter.

(d) Any person that holds both a type certificate and a production certificate issued under part 21 of this chapter for the same product.

(e) Any person who holds a production certificate under part 21 of this chapter for a product for which the person is a licensee of the type certificate.

(f) Any person who applies for a production certificate under part 21 of this chapter for a product for which the person is the holder or licensee of the type certificate.

(g) Any person who holds a type certificate under part 21 of this chapter for a product who allows another person to use the type certificate to manufacture the same product under a production certificate.

##### **§ 5.3 Definitions.**

**Hazard** means a condition or an object with the potential to cause or contribute to an incident or aircraft accident, as defined in 49 CFR 830.2.

**Risk** means the composite of predicted severity and likelihood of the potential effect of a hazard.

**Risk control** means a means to reduce or eliminate the effects of hazards.

**Safety assurance** means processes within the SMS that function systematically to ensure the performance and effectiveness of safety risk controls and that the organization meets or exceeds its safety objectives through the collection, analysis, and assessment of information.

**Safety Management System (SMS)** means the formal, top-down, organization-wide approach to managing safety risk and assuring the effectiveness of safety risk controls. It includes systematic procedures, practices, and policies for the management of safety risk.

**Safety objective** means a measurable goal or desirable outcome related to safety.

**Safety performance** means realized or actual safety accomplishment relative to the organization's safety objectives.

**Safety policy** means the person's documented commitment to safety, which defines its safety objectives and the accountabilities and responsibilities of its employees in regards to safety.

**Safety promotion** means a combination of training and communication of safety information to support the implementation and operation of an SMS in an organization.

**Safety Risk Management** means a process within the SMS composed of describing the system, identifying the hazards, and analyzing, assessing, and controlling risk.

##### **§ 5.5 General requirements.**

(a) **SMS components.** An SMS under this part must include, at a minimum, all of the following components:

- (1) Safety policy that meets the requirements of subpart B of this part.
- (2) Safety risk management that meets the requirements of subpart C of this part.

(3) Safety assurance that meets the requirements of subpart D of this part.

(4) Safety promotion that meets the requirements of subpart E of this part.

(b) *System description.* Any person required to have an SMS under this part must:

(1) Develop a system description that includes, at a minimum, the following information about the safety of the aviation products or services provided by the person:

- (i) The person's aviation-related processes, procedures, and activities.
- (ii) The function and purpose of the aviation products or services provided.
- (iii) The operating environment.
- (iv) The personnel, equipment, and facilities necessary for operation.

(v) Interfacing persons that contribute to the safety of the aviation-related products and services provided.

(2) Revise the system description to reflect changes to the information in (b)(1) of this section.

(c) *Continuing requirements.* Any person required to develop and implement an SMS under this part must maintain the SMS in accordance with this part.

#### **§ 5.7 Requirements for domestic, flag, and supplemental operations.**

(a) Any person authorized to conduct operations under part 121 of this chapter that has an SMS acceptable to the FAA on or before [EFFECTIVE DATE OF THE FINAL RULE], must:

(1) Revise its SMS to meet the requirements of this part in effect on [EFFECTIVE DATE OF THE FINAL RULE].

(2) Submit the revisions for FAA acceptance in a form and manner acceptable to the Administrator no later than [12 MONTHS AFTER EFFECTIVE DATE OF FINAL RULE].

(3) Make available to the Administrator, upon request, all necessary information and data that demonstrates that the person has an SMS that meets the requirements set forth in this part.

(4) Maintain the SMS as long as the person is authorized to conduct operations under part 121 of this chapter.

(b) Any person applying for authorization to conduct operations under part 121 of this chapter or with such application pending on or after [EFFECTIVE DATE OF THE FINAL RULE], must:

(1) Develop and implement an SMS that meets the requirements of this part.

(2) Submit a statement of compliance with this part to the FAA in a form and manner acceptable to the Administrator as part of the certification process.

(3) Make available to the Administrator, upon request, all necessary information and data that demonstrates that the person has an SMS that meets the requirements set forth in this part.

(4) Maintain the SMS as long as the person is authorized to conduct operations under part 121 of this chapter.

#### **§ 5.9 Requirements for commuter and on-demand operations or passenger carrying flights for compensation or hire.**

(a) Any person authorized to conduct operations under part 135 of this chapter or that holds a Letter of Authorization issued under § 91.147 of this chapter before [EFFECTIVE DATE OF THE FINAL RULE], must:

(1) Develop and implement an SMS that meets the requirements of this part no later than [24 MONTHS AFTER EFFECTIVE DATE OF THE FINAL RULE].

(2) Submit to the FAA, a statement of compliance with this part in a form and manner acceptable to the Administrator no later than [24 MONTHS AFTER EFFECTIVE DATE OF THE FINAL RULE].

(b) Any person applying for authorization to conduct operations under part 135 of this chapter or a Letter of Authorization under § 91.147 of this chapter, or with such application pending on or after [EFFECTIVE DATE OF THE FINAL RULE], must:

(1) Develop and implement an SMS that meets the requirements of this part.

(2) Submit a statement of compliance with this part to the FAA in a form and manner acceptable to the Administrator as part of the certification or Letter of Authorization process.

(c) Any person required to develop and implement an SMS under this section must maintain the SMS as long as the person is authorized to conduct operations under either part 135 or § 91.147 of this chapter.

(d) Any person required to develop and implement an SMS under this section must make available to the Administrator, upon request, all necessary information and data that demonstrates that the person has an SMS that meets the requirements set forth in this part.

#### **§ 5.11 Requirements for production certificate holders who are holders or licensees of a type certificate for the same product.**

Any person that holds a production certificate issued under part 21 of this chapter for a product for which the person is the holder or licensee of the type certificate on or before [EFFECTIVE DATE OF THE FINAL RULE], must:

(a) Develop an SMS that meets the requirements of this part.

(b) Submit to the FAA, an implementation plan in accordance with § 5.17 for FAA approval in a form and manner acceptable to the Administrator no later than December 27, 2024.

(c) Implement the SMS in accordance with this part no later than December 27, 2025.

(d) Make available to the Administrator, upon request, all necessary information and data that demonstrates that the person has an SMS that meets the requirements set forth in this part.

(e) Maintain the SMS as long as the person is both a holder of a production certificate and a holder or licensee of a type certificate for the same product.

#### **§ 5.13 Requirements for type certificate holders or licensees applying for a production certificate for the same product.**

(a) This section applies to any holder or licensee of a type certificate for a product who either:

(1) Applies for a production certificate for that same product under part 21 of this chapter on or after [I EFFECTIVE DATE OF THE FINAL RULE], or

(2) Has an application for a production certificate for that same product under part 21 of this chapter pending on [EFFECTIVE DATE OF THE FINAL RULE].

(b) Any person who meets paragraph (a) of this section must:

(1) Develop an SMS that meets the requirements of this part.

(2) Submit an implementation plan in accordance with § 5.17 for FAA approval in a form and manner acceptable to the Administrator, during the certification process.

(3) Implement the SMS in accordance with this part no later than one year from the FAA's approval of the person's implementation plan.

(4) Make available to the Administrator, upon request, all necessary information and data that demonstrates that the person has an SMS that meets the requirements set forth in this part.

(5) Maintain the SMS as long as the person is both a holder of a production certificate and a holder or licensee of a type certificate for the same product.

#### **§ 5.15 Requirements for type certificate holders who allow another person to use the type certificate to obtain a production certificate for the same product.**

(a) This section applies to any person that holds a type certificate for a product that allows another person to use the type certificate to manufacture a product under a production certificate.

(b) Any person that meets paragraph (a) and has a licensing agreement in accordance with § 21.55 of this chapter on [EFFECTIVE DATE OF THE FINAL RULE], must:

- (1) Develop an SMS that meets the requirements of this part.
- (2) Submit an implementation plan in accordance with § 5.17 for FAA approval in a form and manner acceptable to the Administrator no later than December 27, 2024.
- (3) Implement the SMS in accordance with this part no later than December 27, 2025.
- (4) Make available to the Administrator, upon request, all necessary information and data that demonstrates that the person has an SMS that meets the requirements set forth in this part.
- (5) Maintain the SMS as long as the person continues to meet paragraph (a) of this section.

(c) Any person that meets paragraph (a) and enters into a licensing agreement in accordance with § 21.55 of this chapter after [EFFECTIVE DATE OF THE FINAL RULE], must:

- (1) Develop an SMS that meets the requirements of this part.
- (2) Submit an implementation plan in accordance with § 5.17 for FAA approval in a form and manner acceptable to the Administrator when providing written licensing agreements in accordance with § 21.55 of this chapter.
- (3) Implement the SMS in accordance with this part no later than one year from the FAA's approval of the person's implementation plan.
- (4) Make available to the Administrator, upon request, all necessary information and data that demonstrates that the person has an SMS that meets the requirements set forth in this part.
- (5) Maintain the SMS as long as the person continues to meet paragraph (a) of this section.

**§ 5.17 Implementation plan.**

- (a) An implementation plan filed under this part must include a description of the means of compliance (including but not limited to new or existing policies, processes, or procedures) used to meet the requirements of this part.
  - (b) A person required to submit an implementation plan under this part must make available to the Administrator, upon request, all necessary information and data that demonstrates that the SMS has been or will be implemented in accordance with the implementation plan.
- 3. Amend § 5.21 by:

- a. Revising the introductory text of paragraph (a), paragraphs (a)(1) and (a)(2).
  - b. Adding paragraph (a)(7).
  - c. Revising paragraphs (c) and (d).
- The revisions and addition read as follows:

**§ 5.21 Safety policy.**

- (a) Any person required to have an SMS under this part must have a safety policy that includes at least the following:
    - (1) The person's safety objectives.
    - (2) The person's commitment to fulfill the safety objectives.
- \* \* \* \* \*
- (7) A code of ethics that is applicable to all employees, including management personnel and officers, which clarifies that safety is the organization's highest priority.
- \* \* \* \* \*

- (c) The safety policy must be documented and communicated throughout the person's organization.
  - (d) The safety policy must be regularly reviewed by the accountable executive to ensure it remains relevant and appropriate to the person.
- 4. Amend § 5.23 by revising the introductory text of paragraph (a), and revising paragraphs (a)(3) and (b) to read as follows:

**§ 5.23 Safety accountability and authority.**

- (a) Any person required to have an SMS under this part must define in its safety policy the accountability for safety of the following individuals:
    - (3) Employees relative to the person's safety performance.
  - (b) The person must identify the levels of management with the authority to make decisions regarding safety risk acceptance.
- 5. Revise § 5.25 to read as follows:

**§ 5.25 Designation and responsibilities of required safety management personnel.**

- (a) *Designation of the accountable executive.* Any person required to have an SMS under this part must identify an accountable executive who, irrespective of other functions, satisfies the following:
  - (1) Is the final authority over operations authorized to be conducted under the person's certificate(s) or Letter(s) of Authorization.
  - (2) Controls the financial resources required for the operations to be conducted under the person's certificate(s) or Letter(s) of Authorization.
  - (3) Controls the human resources required for the operations authorized to be conducted under the person's

certificate(s) or Letter(s) of Authorization.

- (4) Retains ultimate responsibility for the safety performance of the operations conducted under the person's certificate(s) or Letter(s) of Authorization.

(b) *Responsibilities of the accountable executive.* The accountable executive must accomplish the following:

- (1) Ensure that the SMS is properly implemented and is performing across all pertinent areas.
- (2) Develop and sign the safety policy.
- (3) Communicate the safety policy throughout the person's organization.
- (4) Regularly review the safety policy to ensure it remains relevant and appropriate to the person.
- (5) Regularly review the safety performance and direct actions necessary to address substandard safety performance in accordance with § 5.75.

(c) *Designation of management personnel.* The accountable executive must designate sufficient management personnel who, on behalf of the accountable executive, are responsible for the following:

- (1) Coordinate implementation, maintenance, and integration of the SMS throughout the person's organization.
- (2) Facilitate hazard identification and safety risk analysis.
- (3) Monitor the effectiveness of safety risk controls.
- (4) Ensure safety promotion throughout the person's organization as required in subpart E of this part.
- (5) Regularly report to the accountable executive on the performance of the SMS and on any need for improvement.

■ 6. Revise § 5.27 to read as follows:

**§ 5.27 Coordination of emergency response planning.**

- Where emergency response procedures are necessary, any person required to have an SMS under this part must develop, and the accountable executive must approve as part of the safety policy, an emergency response plan that addresses at least the following:
- (a) Delegation of emergency authority throughout the person's organization.
  - (b) Assignment of employee responsibilities during the emergency.
  - (c) Coordination of the emergency response plans with the emergency response plans of other organizations it must interface with during the provision of its services.
- 7. Revise the introductory text of § 5.51 to read as follows:

**§ 5.51 Applicability.**

Any person required to have an SMS under this part must apply safety risk management to the following:

\* \* \* \* \*

- 8. Amend § 5.53 by:
  - a. Revising paragraph (a).
  - b. Adding paragraph (b)(5).
  - c. Revising paragraph (c).

The revisions and addition read as follows:

**§ 5.53 System analysis and hazard identification.**

(a) When applying safety risk management, any person required to have an SMS under this part must analyze the systems identified in § 5.51. Those system analyses must be used to identify hazards under paragraph (c) of this section, and in developing and implementing risk controls related to the system under § 5.55(c).

(b) \* \* \*

(5) The interfaces of the system.

(c) Any person required to have an SMS under this part must develop and maintain processes to identify hazards within the context of the system analysis.

- 9. Revise § 5.55 to read as follows:

**§ 5.55 Safety risk assessment and control.**

Any person required to have an SMS under this part must:

(a) Develop and maintain processes to analyze safety risk associated with the hazards identified in § 5.53(c).

(b) Define a process for conducting risk assessment that allows for the determination of acceptable safety risk.

(c) Develop and maintain processes to develop safety risk controls that are necessary as a result of the safety risk assessment process under paragraph (b) of this section.

(d) Evaluate whether the risk will be acceptable with the proposed safety risk control applied before the safety risk control is implemented.

- 10. Amend § 5.71 by:
  - a. Revising the introductory text of paragraph (a).
  - b. Revising paragraphs (a)(6), (a)(7), and (b).
  - c. Adding paragraph (c).

The revisions and addition read as follows:

**§ 5.71 Safety performance monitoring and measurement.**

(a) Any person required to have an SMS under this part must develop and maintain processes and systems to acquire data with respect to its products and services to monitor the safety performance of the organization. These processes and systems must include, at a minimum, the following:

\* \* \* \* \*

(6) Investigations of reports regarding potential non-compliance with regulatory standards or other safety risk controls established by the person through the safety risk management process established in subpart C of this part.

(7) A confidential employee reporting system in which employees can report hazards, issues, concerns, occurrences, incidents, as well as propose solutions and safety improvements, without concern of reprisal for reporting.

(b) Any person required to have an SMS under this part must develop and maintain processes that analyze the data acquired through the processes and systems identified under paragraph (a) of this section and any other relevant data with respect to its products and services.

(c) Any person that holds both a type certificate and a production certificate issued under part 21 of this chapter for the same product must submit a summary of the confidential employee reports received under paragraph (a)(7) of this section to the Administrator once every 6 months.

- 11. Amend § 5.73 by revising the introductory text of paragraph (a), and revising paragraphs (a)(1) and (b) to read as follows:

**§ 5.73 Safety performance assessment.**

(a) Any person required to have an SMS under this part must conduct assessments of its safety performance against its safety objectives, which include reviews by the accountable executive, to:

(1) Ensure compliance with the safety risk controls established by the person.

\* \* \* \* \*

(b) Upon completion of the assessment, if ineffective controls or new hazards are identified under paragraphs (a)(2) through (5) of this section, the person must use the safety risk management process described in subpart C of this part.

- 12. Revise § 5.75 to read as follows:

**§ 5.75 Continuous improvement.**

Any person required to have an SMS under this part must establish and implement processes to correct safety performance deficiencies identified in the assessments conducted under § 5.73.

- 13. Revise § 5.91 to read as follows:

**§ 5.91 Competencies and training.**

Any person required to have an SMS under this part must provide training to each individual identified in § 5.23 to ensure the individuals attain and maintain the competencies necessary to perform their duties relevant to the operation and performance of the SMS.

- 14. Amend § 5.93 by revising the introductory text to read as follows:

**§ 5.93 Safety communication.**

Any person required to have an SMS under this part must develop and maintain a means for communicating safety information that, at a minimum:

\* \* \* \* \*

- 15. Add § 5.94 to read as follows:

**§ 5.94 Notification of hazards to interfacing persons.**

(a) If a person required to have an SMS under this part identifies a hazard in the operating environment, the person must provide notice of the hazard to the interfacing person or persons identified in the system description maintained under § 5.5(b) who, to the best of their knowledge, could address the hazard or mitigate the risk.

(b) Any person required to have an SMS under this part must develop and maintain procedures for reporting and receiving hazard information in accordance with subsection (a).

- 16. Amend § 5.95 by revising the introductory text and adding paragraph (c) to read as follows:

**§ 5.95 SMS documentation.**

Any person required to have an SMS under this part must develop and maintain the following SMS documentation:

\* \* \* \* \*

(c) System description.

- 17. Revise § 5.97 to read as follows:

**§ 5.97 SMS records.**

Any person required to have an SMS under this part must:

(a) Maintain records of outputs of safety risk management processes as described in subpart C of this part. Such records must be retained for as long as the control remains relevant to the operation.

(b) Maintain records of outputs of safety assurance processes as described in subpart D of this part. Such records must be retained for a minimum of 5 years.

(c) Maintain a record of all training provided under § 5.91 for each individual. Such records must be retained for as long as the individual is employed by the person.

(d) Retain records of all communications provided under § 5.93 or § 5.94 for a minimum of 24 consecutive calendar months.

## PART 21—CERTIFICATION PROCEDURES FOR PRODUCTS AND ARTICLES

■ 18. The authority citation for part 21 is revised to read as follows:

**Authority:** 42 U.S.C. 7572; 49 U.S.C. 106(f), 106(g), 40105, 40113, 44701–44702, 44704, 44707, 44709, 44711, 44713, 44715, 45303; Pub. L. 116–260; 134 Stat. 2309.

■ 19. Amend § 21.55 to read as follows:

### § 21.55 Responsibility of type certificate holders that provide written licensing agreements.

A type certificate holder who allows a person to use the type certificate to manufacture a new aircraft, aircraft engine, or propeller must meet the applicable requirements of part 5 of this chapter and provide that person with a written licensing agreement acceptable to the FAA.

■ 20. Amend § 21.135 by adding paragraph (c) to read as follows:

#### § 21.135 Organization.

\* \* \* \* \*

(c) Each applicant for or holder of a production certificate, except those based only on a supplemental type certificate or on the rights to the benefits of a supplemental type certificate under a licensing agreement, must meet the applicable requirements of part 5 of this chapter.

■ 21. Amend § 21.147 by revising paragraph (b) to read as follows:

#### § 21.147 Amendment of production certificates.

\* \* \* \* \*

(b) An applicant for an amendment to a production certificate to add a type certificate or model, or both, must comply with §§ 21.135(c), 21.137, 21.138, and 21.150.

\* \* \* \* \*

## PART 91—GENERAL OPERATING AND FLIGHT RULES

■ 22. The authority citation for part 91 continues to read as follows:

**Authority:** 49 U.S.C. 106(f), 106(g), 40101, 40103, 40105, 40113, 40120, 44101, 44111, 44701, 44704, 44709, 44711, 44712, 44715, 44716, 44717, 44722, 46306, 46315, 46316, 46504, 46506–46507, 47122, 47508, 47528–47531, 47534, Pub. L. 114–190, 130 Stat. 615 (49 U.S.C. 44703 note); articles 12 and 29 of the Convention on International Civil Aviation (61 Stat. 1180), (126 Stat. 11).

■ 23. Revise § 91.147 to read as follows:

### § 91.147 Passenger carrying flights for compensation or hire.

(a) *Definitions.* For the purposes of this section *Operator* means any person conducting nonstop passenger-carrying flights in an airplane or helicopter for compensation or hire in accordance with §§ 119.1(e)(2), 135.1(a)(5), or 121.1(d), of this chapter that begin and end at the same airport and are conducted within a 25-statute mile radius of that airport.

(b) *General requirements.* An Operator conducting passenger-carrying flights for compensation or hire must meet the following requirements unless all flights are conducted under § 91.146. The Operator must:

(1) Comply with the safety provisions of part 136, subpart A of this chapter.

(2) Register and implement its drug and alcohol testing programs in accordance with part 120 of this chapter.

(3) Comply with the applicable requirements of part 5 of this chapter.

(4) Apply for and receive a Letter of Authorization from the responsible Flight Standards office.

(c) *Letter of Authorization.* Each application for a Letter of Authorization must include the following information:

(1) Name of Operator, agent, and any d/b/a (doing-business-as) under which that Operator does business.

(2) Principal business address and mailing address.

(3) Principal place of business (if different from business address).

(4) Name of person responsible for management of the business.

(5) Name of person responsible for aircraft maintenance.

(6) Type of aircraft, registration number(s), and make/model/series.

(7) Antidrug and Alcohol Misuse Prevention Program registration.

(8) The statement of compliance required under part 5 of this chapter.

(d) *Compliance.* The Operator must comply with the provisions of the Letter of Authorization received.

## PART 119—CERTIFICATION: AIR CARRIERS AND COMMERCIAL OPERATORS

■ 24. The authority citation for part 119 continues to read as follows:

**Authority:** Pub. L. 111–216, sec. 215 (August 1, 2010); 49 U.S.C. 106(f), 106(g), 1153, 40101, 40102, 40103, 40113, 44105, 44106, 44111, 44701–44717, 44722, 44901, 44903, 44904, 44906, 44912, 44914, 44936, 44938, 46103, 46105.

■ 25. Revise § 119.8 to read as follows:

### § 119.8 Safety Management Systems.

No certificate holder authorized to conduct operations under part 121 or 135 of this chapter may operate an aircraft under that certificate unless the certificate holder complies with the applicable requirements of part 5 of this chapter.

Issued under authority provided by 49 U.S.C. 106(f), 44701(a), and 44703 in Washington, DC.

**Warren S. Randolph,**

*Deputy Executive Director, Office of Accident Investigation and Prevention, Federal Aviation Administration.*

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