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ALL-OF-THE-ABOVE FEDERAL BUILDING ENERGY CONSERVATION ACT OF 2019

SEPTEMBER 25, 2019.—Ordered to be printed

Ms. MURKOWSKI, from the Committee on Energy and Natural Resources, submitted the following

R E P O R T

[To accompany S. 1245]

The Committee on Energy and Natural Resources, to which was referred the bill (S. 1245) to improve energy performance in Federal buildings, and for other purposes, having considered the same, reports favorably thereon with amendments and recommends that the bill, as amended, do pass.

AMENDMENTS

The amendments are as follows:

On page 2, line 1, strike "subsections (a) and (b)" and insert "subsection (a)".

On page 3, line 21, insert closing quotation marks and a semicolon after the period.

On page 3, strike lines 22 and 23 and insert the following:

> (2) in subsection (b), by striking paragraphs (1) and (2) and inserting the following:

On page 4, line 20, strike "(2)" and insert "(3)".

PURPOSE

The purpose of S. 1245 is to improve energy performance in Federal buildings.

BACKGROUND AND NEED

Since the 1973 oil embargo and every subsequent energy crisis, studies have shown that the U.S. could save energy and money by investing in energy efficiency measures. Today, efficient energy use

89–010

and the deployment of more efficient technologies are critical to U.S. economic competitiveness and job creation. In addition, efficient energy use reduces pollution that would be associated with energy production.

Nevertheless, many existing energy efficiency technologies and programs have yet to be installed or implemented. The National Academies' 2010 study, *Real Prospects for Energy Efficiency in the United States*, regarding the potential for energy efficiency in commercial and residential buildings, transportation, and manufacturing, found that energy efficiency could more than offset the Energy Information Administration's (EIA's) projected increase in U.S. energy consumption through 2030.

Forty percent of the nation's energy is consumed in buildings. The U.S. industrial sector consumes more energy than any other sector of the economy and the Federal Government is the largest single energy consumer in the U.S. This legislation will positively impact the energy use footprint of Federal buildings by encouraging the use of energy management systems, requiring Federal buildings to meet state or local energy codes when stronger, and applying a standard of 30 percent better than code for major renovations. The legislation also repeals the Federal building energy efficiency performance standards contained in section 305(a)(3)(D) of the Energy Conservation and Production Act (ECPA, Public Law 94–385).

LEGISLATIVE HISTORY

S. 1245 was introduced by Senators Hoeven and Manchin on April 30, 2019.

Companion legislation, H.R. 2664, was introduced in the House of Representatives by Representatives Carter and Veasey on May 10, 2019, and referred to the Committee on Energy and Commerce and the Committee on Transportation and Infrastructure.

In the 115th Congress, Senators Hoeven and Manchin introduced similar legislation, S. 3295, on July 26, 2018. Parts of the measure were included as sections 1114, 1115, and 1116 in S. 1460, the Energy and Natural Resources Act of 2017 (Cal. 162).

Companion legislation, H.R. 6584, was introduced in the House of Representatives by Representatives Carter and Green on July 26, 2018, and referred to the Committee on Energy and Commerce and the Committee on Transportation and Infrastructure.

In the 114th Congress, Senators Hoeven, Manchin, and Donnelly introduced similar legislation, S. 869, on March 26, 2015. The Committee on Energy and Natural Resources held a hearing on S. 869 on April 30, 2015 (S. Hrg. 114 166). Parts of the measure were included as sections 1015, 1016, 1017, and 1018 in S. 2012, the Energy Policy Modernization Act of 2016, which the Senate passed, as amended, on April 20, 2016.

Identical language was also included as sections 431 and 432 in S. 720, the Energy Savings and Industrial Competitiveness Act of 2015, introduced by Senators Portman, Shaheen, Ayotte, Bennet, Cantwell, Collins, Coons, Franken, Hoeven, Manchin, Murkowski, Warner, and Wicker on March 11, 2015. Senators Heller and Heitkamp were added as cosponsors. The Committee on Energy and Natural Resources held a hearing on S. 720 on April 30, 2015

(S. Hrg. 114 166), and met in open business session on July 30, 2015, and ordered S. 720 favorably reported, as amended.

In the 113th Congress, Senators Hoeven and Manchin introduced similar legislation, S. 1199, on June 20, 2013. Senator Heitkamp was added as a cosponsor on June 25, 2013. The Subcommittee on Energy held a hearing on S. 1199 on June 25, 2013 (S. Hrg. 113 70).

The Committee on Energy and Natural Resources met in open business session on July 16, 2019, and ordered S. 1245 favorably reported, as amended.

COMMITTEE RECOMMENDATION

The Senate Committee on Energy and Natural Resources, in open business session on July 16, 2019, by a majority voice vote of a quorum present, recommends that the Senate pass S. 1245, if amended as described herein. Senator Lee asked to be recorded as voting no.

COMMITTEE AMENDMENTS

During its consideration of S. 1245, the Committee adopted amendments to make technical corrections.

SECTION-BY-SECTION ANALYSIS

Section. 1. Short title

Section 1 sets forth the short title of the bill.

Sec. 2. Energy performance requirement for Federal buildings

Section 2 amends Section 543 of the National Energy Conservation Policy Act (Public Law 95 619) by extending the current annual performance requirements for Federal buildings of a 2.5 percent reduction in energy use through 2027 and incrementally increasing the requirement to 20 percent by 2027. Buildings in which energy intensive activities are carried out may be excluded from this requirement. This section also directs the Secretary of Energy (Secretary) to review the implementation results of the energy performance requirements, and submit a report to Congress by December 31, 2026, with recommendations on such requirements for fiscal years 2028 through 2037. This section further requires Federal agencies to begin installing energy and water conservation measures deemed to be life-cycle cost-effective by October 1, 2019. If an agency fails to meet this deadline, it must submit an explanatory report to the Secretary. The Secretary is required to submit a report to Congress no later than October 1, 2021, and every two years thereafter, describing any noncompliance from agencies. Section 2 also requires each Federal energy manager to complete a comprehensive energy and water evaluation for approximately 25 percent of their facilities each year. Facilities that meet certain criteria receive an exception from the comprehensive energy and water evaluation requirement. Finally, within two years of each evaluation, facility energy managers are required to implement any energy or water-savings measures that are deemed life-cycle cost effective.

Sec. 3. Federal building energy efficiency performance standards; certification system and level for green buildings

Section 3(a) amends section 303 of ECPA to define the term "major renovation."

Subsection (b) amends section 305(a)(2)(A) of ECPA to require that Federal buildings be held to the most recently published standards of the International Energy Conservation Code and/or ASHRAE Standard 90.1 2004.

Subsection (c) amends section 305(a)(3) of ECPA to require the Secretary to establish more stringent revised Federal building energy efficiency performance standards for new Federal buildings and Federal buildings with major renovations unless demonstrated not to be lifecycle cost-effective. If deemed lifecycle cost-effective, new Federal buildings and major renovations must be designed to achieve energy consumption levels at least 30 percent below industry standards; use sustainable design principles; use water conservation technologies; and provide not less than 30 percent of hot water demand from solar hot water heaters. The subsection also removes the requirement that Federal buildings phase-out fossil fuel use by 2030.

Subsection (d) amends section 306 of ECPA by expanding the scope of building energy conservation standards for new Federal buildings to include major renovations.

COST AND BUDGETARY CONSIDERATIONS

The Congressional Budget Office estimate of the costs of this measure has been requested but was not received at the time the report was filed. When the Congressional Budget Office completes its cost estimate, it will be posted on the internet at www.cbo.gov.

REGULATORY IMPACT EVALUATION

In compliance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee makes the following evaluation of the regulatory impact which would be incurred in carrying out S. 1245. The bill is not a regulatory measure in the sense of imposing Government-established standards or significant economic responsibilities on private individuals and businesses.

No personal information would be collected in administering the program. Therefore, there would be no impact on personal privacy.

Little, if any, additional paperwork would result from the enactment of S. 1245, as ordered reported.

CONGRESSIONALLY DIRECTED SPENDING

S. 1245, as ordered reported, does not contain any congressionally directed spending items, limited tax benefits, or limited tariff benefits as defined in rule XLIV of the Standing Rules of the Senate.

EXECUTIVE COMMUNICATIONS

The Committee did not request executive views for S. 1245.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, the changes in existing law made by the original bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman):

NATIONAL ENERGY CONSERVATION POLICY ACT OF 1978

Public Law 95–619, as Amended

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TITLE V—FEDERAL ENERGY INITIATIVE

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PART 3—FEDERAL ENERGY MANAGEMENT

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SECTION 543. ENERGY MANAGEMENT REQUIREMENTS.

[(a) ENERGY PERFORMANCE REQUIREMENT FOR FEDERAL BUILDINGS.—(1) Subject to paragraph (2), each agency shall apply energy conservation measures to, and shall improve the design for the construction of, the Federal buildings of the agency (including each industrial or laboratory facility) so that the energy consumption per gross square foot of the Federal buildings of the agency in fiscal years 2006 through 2015 is reduced, as compared with the energy consumption per gross square foot of the Federal buildings of the agency in fiscal year 2003, by the percentage specified in the following table:

Fiscal Year	Percentage Reduction
2006	2
2007	4
2008	9
2009	12
2010	15
2011	18
2012	21
2013	24
2014	27
2015	30

[(2) An agency may exclude from the requirements of paragraph (1) any building, and the associated energy consumption and gross square footage, in which energy intensive activities are carried out. Each agency shall identify and list in each report made under section 548(a) the buildings designated by it for such exclusion.

[(3) Not later than December 31, 2014, the Secretary shall review the results of the implementation of the energy performance requirement established under paragraph (1) and submit to Congress recommendations concerning energy performance requirements for fiscal years 2016 through 2025.]

(a) ENERGY PERFORMANCE REQUIREMENT FOR FEDERAL BUILDINGS.—

(1) IN GENERAL.—Subject to paragraph (2), to the maximum extent life cycle cost-effective, each agency shall apply energy conservation measures to, and shall improve the design for the construction of, the Federal buildings of the agency (including each industrial or laboratory facility) so that the energy consumption per gross square foot of the Federal buildings of the agency in fiscal years 2020 through 2027 is reduced, as compared with the energy consumption per gross square foot of the Federal buildings of the agency in fiscal year 2018, by the percentage specified in the following table:

Fiscal Year	***Percentage Reduction***
2020	*2.5*
2021	*5*
2022	*7.5*
2023	*10*
2024	*12.5*
2025	*15*
2026	*17.5*
2027	*24*

(2) EXCLUSION FOR BUILDINGS WITH ENERGY INTENSIVE ACTIVITIES.—

(A) IN GENERAL.—An agency may exclude from the requirements of paragraph (1) any building (including the associated energy consumption and gross square footage of the building) in which energy intensive activities are carried out.

(B) REPORTS.—Each agency shall identify and include in each report under section 548(a) each building designated by the agency for exclusion under subparagraph (A) during the period covered by the report.

(3) RECOMMENDATIONS.—Not later than December 31, 2026, the Secretary shall—

(A) review the results of the implementation of the energy performance requirement established under paragraph (1); and

(B) submit to Congress recommendations concerning energy performance requirements for fiscal years 2028 through 2037.

(b) ENERGY MANAGEMENT REQUIREMENT FOR FEDERAL AGENCIES.—[(1) Not later than January 1, 2005, each agency shall, to the maximum extent practicable, install in Federal buildings owned by the UnitedStates all energy and water conservation measures with payback periods of less than 10 years, as determined by using the methods and procedures developed pursuant to section 544.

[(2) The Secretary may waive the requirements of this subsection for any agency for such periods as the Secretary may determine if the Secretary finds that the agency is taking all practicable steps to meet the requirements and that the requirements of this subsection will pose an unacceptable burden upon the agency. If the Secretary waives the requirements of this subsection, the Secretary shall, as part of the report required under section 548(b), notify the Congress in writing

with an explanation and a justification of the reasons for such waiver.]

(1) IN GENERAL.—Each agency shall—

(A) not later than October 1, 2019, begin installing in Federal buildings owned by the United States all energy and water conservation measures determined by the Secretary to be life-cycle cost-effective; and

(B) complete the installation described in subparagraph (A) as soon as practicable after the date referred to in that subparagraph.

(2) EXPLANATION OF NONCOMPLIANCE.—

(A) IN GENERAL.—If an agency fails to comply with paragraph (1), the agency shall submit to the Secretary, using guidelines developed by the Secretary, an explanation of the reasons for the failure.

(B) REPORT TO CONGRESS.—Not later than October 1, 2021, and every 2 years thereafter, the Secretary shall submit to Congress a report describing any noncompliance with the requirements of paragraph (1).

(3) This subsection shall not apply to an agency's facilities that generate or transmit electric energy or to the uranium enrichment facilities operated by the Department of Energy.

(4) An agency may participate in the Environmental Protection Agency's "Green Lights" program for purposes of receiving technical assistance in complying with the requirements of this section.

(c) EXCLUSIONS.—(1)(A) An agency may exclude, from the energy performance requirement for a fiscal year established under subsection (a) of this section and the energy management requirement established under subsection (b) of this section, any Federal building or collection of Federal buildings, if the head of the agency finds that—

(i) compliance with those requirements would be impracticable;

(ii) the agency has completed and submitted all federally required energy management reports;

(iii) the agency has achieved compliance with the energy efficiency requirements of this chapter, the Energy Policy Act of 1992, Executive orders, and other Federal law; and

(iv) the agency has implemented all practicable, life cycle cost-effective projects with respect to the Federal building or collection of Federal buildings to be excluded.

(B) A finding of impracticability under subparagraph (A)(i) shall be based on—

(i) the energy intensiveness of activities carried out in the Federal building or collection of Federal buildings; or

(ii) the fact that the Federal building or collection of Federal buildings is used in the performance of a national security function.

(2) Each agency shall identify and list, in each report made under section 548(a), the Federal buildings designated by it for such exclusion. The Secretary shall review such findings for consistency with the standards for exclusion set forth in paragraph (1), and may within 90 days after receipt of the findings, reverse the exclusion. In the case of any such reversal, the agency shall comply

with the requirements of subsections (a) and (b)(1) of this section for the building concerned.

(3) Not later than 180 days after the date of enactment of this paragraph, the Secretary shall issue guidelines that establish criteria for exclusions under paragraph (1).

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(f) USE OF ENERGY AND WATER EFFICIENCY MEASURES IN FEDERAL BUILDINGS.—

(1) DEFINITIONS.—In this subsection:

(A) COMMISSIONING.—The term "commissioning", with respect to a facility, means a systematic process—

(i) of ensuring, using appropriate verification and documentation, during the period beginning on the initial day of the design phase of the facility and ending not earlier than 1 year after the date of completion of construction of the facility, that all facility systems perform interactively in accordance with—

(I) the design documentation and intent of the facility; and

(II) the operational needs of the owner of the facility, including preparation of operation personnel; and

(ii) the primary goal of which is to ensure fully functional systems that can be properly operated and maintained during the useful life of the facility.

(B) ENERGY MANAGER.—

(i) IN GENERAL.—The term "energy manager", with respect to a facility, means the individual who is responsible for—

(I) ensuring compliance with this subsection by the facility; and

(II) reducing energy use at the facility.

(ii) INCLUSIONS.—The term "energy manager" may include—

(I) a contractor of a facility;

(II) a part-time employee of a facility; and

(III) an individual who is responsible for multiple facilities.

(C) FACILITY.—

(i) IN GENERAL.—The term "facility" means any building, installation, structure, or other property (including any applicable fixtures) owned or operated by, or constructed or manufactured and leased to, the Federal Government.

(ii) INCLUSIONS.—The term "facility" includes—

(I) a group of facilities at a single location or multiple locations managed as an integrated operation; and

(II) contractor-operated facilities owned by the Federal Government.

(iii) EXCLUSIONS.—The term "facility" does not include any land or site for which the cost of utilities is not paid by the Federal Government.

(D) LIFE CYCLE COST EFFECTIVE.—The term "life cycle cost-effective", with respect to a measure, means a meas-

ure, the estimated savings of which exceed the estimated costs over the lifespan of the measure, as determined in accordance with section 544.

(E) ONGOING COMMISSIONING.—The term 'ongoing commissioning' means an ongoing process of commissioning using monitored data, the primary goal of which is to ensure continuous optimum performance of a facility, in accordance with design or operating needs, over the useful life of the facility, while meeting facility occupancy requirements.

[(E)] *(F)* PAYBACK PERIOD.—

(i) IN GENERAL.—Subject to clause

(ii), the term "payback period", with respect to a measure, means a value equal to the quotient obtained by dividing—

(I) the estimated initial implementation cost of the measure (other than financing costs); by

(II) the annual cost savings resulting from the measure, including—

(aa) net savings in estimated energy and water costs; and

(bb) operations, maintenance, repair, replacement, and other direct costs.

(ii) MODIFICATIONS AND EXCEPTIONS.—The Secretary, in guidelines issued pursuant to paragraph (6), may make such modifications and provide such exceptions to the calculation of the payback period of a measure as the Secretary determines to be appropriate to achieve the purposes of this chapter.

[(F)]*(G)* RECOMMISSIONING.—The term "recommissioning" means a process—

(i) of commissioning a facility or system beyond the project development and warranty phases of the facility or system; and

(ii) the primary goal of which is to ensure optimum performance of a facility, in accordance with design or current operating needs, over the useful life of the facility, while meeting building occupancy requirements.

[(G)] *(H)* RETRCOMMISSIONING.—The term "retrocommissioning" means a process of commissioning a facility or system that was not commissioned at the time of construction of the facility or system.

(2) FACILITY ENERGY MANAGERS.—

(A) IN GENERAL.—Each Federal agency shall designate an energy manager responsible for implementing this subsection and reducing energy use at each facility that meets criteria under subparagraph (B).

(B) COVERED FACILITIES.—The Secretary shall develop criteria, after consultation with affected agencies, energy efficiency advocates, and energy and utility service providers, that cover, at a minimum, Federal facilities, including central utility plants and distribution systems and other energy intensive operations, that constitute at least 75 percent of facility energy use at each agency.

(C) ENERGY MANAGEMENT SYSTEM.—An energy manager designated for a facility under subparagraph (A) shall take into consideration—

(i) the use of a system to manage energy use at the facility; and

(ii) the applicability of certification of the facility in accordance with the International Organization for Standardization standard numbered 50001 and entitled "Energy Management Systems".

[(3) ENERGY AND WATER EVALUATIONS.—

[(A) EVALUATIONS.—Effective beginning on the date that is 180 days after the date of enactment of this subsection and annually thereafter, energy managers shall complete, for each calendar year, a comprehensive energy and water evaluation for approximately 25 percent of the facilities of each agency that meet the criteria under paragraph (2)(B) in a manner that ensures that an evaluation of each such facility is completed at least once every 4 years.

[(B) RECOMMISSIONING AND RETROCOMMISSIONING.—As part of the evaluation under subparagraph (A), the energy manager shall identify and assess recommissioning measures (or, if the facility has never been commissioned, retrocommissioning measures) for each such facility.

[(4) IMPLEMENTATION OF IDENTIFIED ENERGY AND WATER EFFICIENCY MEASURES.—Not later than 2 years after the completion of each evaluation under paragraph (3), each energy manager may—

[(A) implement any energy- or water-saving measure that the Federal agency identified in the evaluation conducted under paragraph (3) that is life cycle cost-effective; and

[(B) bundle individual measures of varying paybacks together into combined projects.]

(3) ENERGY AND WATER EVALUATIONS AND COMMISSIONING.—

(A) EVALUATIONS.—Except as provided in subparagraph (B), not later than the date that is 180 days after the date of enactment of the All-of-the-Above Federal Building Energy Conservation Act of 2019, and annually thereafter, each energy manager shall complete, for the preceding calendar year, a comprehensive energy and water evaluation and recommissioning or retrocommissioning for approximately 25 percent of the facilities of the applicable agency that meet the criteria under paragraph (2)(B) in a manner that ensures that an evaluation of each such facility is completed not less frequently than once every 4 years.

(B) EXCEPTIONS.—An evaluation and recommissioning or retrocommissioning shall not be required under subparagraph (A) with respect to a facility that, as of the date on which the evaluation and recommissioning or retrocommissioning would otherwise occur—

(i) has had a comprehensive energy and water evaluation during the preceding 8-year period;

(ii)(I) has been commissioned, recommissioned, or retrocommissioned during the preceding 10-year period; or

(II) is under ongoing commissioning;

(iii) has not had a major change in function or use since the previous evaluation and recommissioning;

(iv) has been benchmarked with public disclosure under paragraph (8) during the preceding calendar year; and

(v)(I) based on the benchmarking described in clause (iv), has achieved at a facility level the most-recent cumulative energy savings target under subsection (a), as compared to the earlier of—

(aa) the date of the most recent evaluation; and

(bb) the date—

(AA) of the most recent commissioning, recommissioning, or retrocommissioning; or

(BB) on which ongoing commissioning began; or

(II) has a long-term contract in place guaranteeing energy savings at least as great as the energy savings target under subclause (I).

(4) IMPLEMENTATION OF IDENTIFIED ENERGY AND WATER EFFICIENCY MEASURES.—Not later than 2 years after the completion of each evaluation under paragraph (3), each energy manager shall—

(A) implement any energy- or water-saving measure that the Federal agency identified in the evaluation conducted that is life cycle cost-effective; and

(B) bundle individual measures of varying paybacks together into combined projects.

(5) FOLLOW UP ON IMPLEMENTED MEASURES.—For each measure implemented under paragraph (4), each energy manager shall ensure that—

(A) equipment, including building and equipment controls, is fully commissioned at acceptance to be operating at design specifications;

(B) a plan for appropriate operations, maintenance, and repair of the equipment is in place at acceptance and is followed;

(C) equipment and system performance is measured during its entire life to ensure proper operations, maintenance, and repair; and

(D) energy and water savings are measured and verified.

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ENERGY CONSERVATION AND PRODUCTION ACT

Public Law 94–385

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TITLE III—ENERGY CONSERVATION STANDARDS FOR NEW BUILDINGS

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SEC. 303. DEFINITIONS.

As used in this:

(1) ADMINISTRATOR.—The term "Administrator" means the Administrator of the Federal Energy Administration; except that after such Administration ceases to exist, such term means any officer of the United States designated by the President for purposes of this title.

[(16)**]** *(2) ASHRAE.*—The term "ASHRAE" means the American Society of Heating, Refrigerating, and Air-Conditioning Engineers.

[(2)**]** *(3) BUILDING.*—The term "building" means any structure to be constructed which includes provision for a heating or cooling system, or both, or for a hot water system.

[(3)**]** *(4) BUILDING CODE.*—The term "building code" means a legal instrument which is in effect in a State or unit of general purpose local government, the provisions of which must be adhered to if a building is to be considered to be in conformance with law and suitable for occupancy and use.

[(15)**]** *(5) CABO.*—The term "CABO" means the Council of American Building Officials.

[(4)**]** *(6) COMMERCIAL BUILDING.*—The term "commercial building" means any building other than a residential building, including any building developed for industrial or public purposes.

[(5)**]** *(7) FEDERAL AGENCY.*—The term "Federal agency" means any department, agency, corporation, or other entity or instrumentality of the executive branch of the Federal Government, including the United States Postal Service, the Federal National Mortgage Association, and the Federal Home Loan Mortgage Corporation.

[(6)**]** *(8) FEDERAL BUILDING.*—The term "Federal building" means any building to be constructed by, or for the use of, any Federal agency. Such term shall include buildings built for the purpose of being leased by a Federal agency, and privatized military housing.

[(13)**]** *(9) FEDERAL BUILDING ENERGY STANDARDS.*—The term "Federal building energy standards"' means energy consumption objectives to be met without specification of the methods, materials, or equipment to be employed in achieving those objectives, but including statements of the requirements, criteria, and evaluation methods to be used, and any necessary commentary.

[(7)**]** *(10) FEDERAL FINANCIAL ASSISTANCE.*—The term "Federal financial assistance" means (A) any form of loan, grant, guarantee, insurance, payment, rebate, subsidy, or any other form of direct or indirect Federal assistance (other than general or special revenue sharing or formula grants made to States) approved by any Federal officer or agency; or (B) any loan made or purchased by any bank, savings and loan association, or similar institution subject to regulation by the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, the Comptroller of the Currency, the Federal Home Loan Bank Board, the Federal Savings and Loan Insurance Corporation, or the National Credit Union Administration.

(11) MAJOR RENOVATION.—The term "major renovation" means a modification of the energy systems of a building that is sufficiently extensive to ensure that the entire building can achieve compliance with applicable energy standards for new buildings, based on such criteria as the Secretary shall establish, by regulation.

[(8)**]** *(12) NATIONAL INSTITUTE OF BUILDING SCIENCES.*—The term "National Institute of Building Sciences" means the institute established by section 1701j–2 of title 12.

[(9)**]** *(13) RESIDENTIAL BUILDING.*—The term "residential building" means any structure which is constructed and developed for residential occupancy.

[(10)**]** *(14) SECRETARY.*—The term "Secretary" means the Secretary of Energy.

[(11)**]** *(15) STATE.*—The term "State" includes each of the several States, the District of Columbia, the Commonwealth of Puerto Rico, and any territory and possession of the United States.

[(12)**]** *(16) UNIT OF GENERAL PURPOSE LOCAL GOVERNMENT.*—The term "unit of general purpose local government" means any city, county, town, municipality, or other political subdivision of a State (or any combination thereof), which has a building code or similar authority over a particular geographic area.

[(14)**]** *(17) VOLUNTARY BUILDING ENERGY CODE.*—The term "voluntary building energy code" means a building energy code developed and updated through a consensus process among interested persons, such as that used by the Council of American Building Officials; the American Society of Heating, Refrigerating, and Air-Conditioning Engineers; or other appropriate organizations.

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SECTION 305. FEDERAL BUILDING ENERGY EFFICIENCY STANDARDS

(a)(1) IN GENERAL.—Not later than 2 years after October 24, 1992, the Secretary, after consulting with appropriate Federal agencies, CABO, ASHRAE, the National Association of Home Builders, the Illuminating Engineering Society, the American Institute of Architects, the National Conference of the States on Building Codes and Standards, and other appropriate persons, shall establish, by rule, Federal building energy standards that require in new Federal buildings those energy efficiency measures that are technologically feasible and economically justified. Such standards shall become effective no later than 1 year after such rule is issued.

(2) The standards established under paragraph (1) shall—

(A) contain energy saving and renewable energy specifications that meet or exceed the energy saving and renewable energy specifications of **[**the 2004 International Energy Conservation Code (in the case of residential buildings) or ASHRAE Standard 90.1—2004 (in the case of commercial buildings)**]** *the most recently published edition of the International Energy Conservation Code (in the case of residential buildings) or ASHRAE Standard 90.1 (in the case of commercial buildings) on the date of enactment of the All-of-the-Above Federal Building Energy Conservation Act of 2019;*

(B) to the extent practicable, use the same format as the appropriate voluntary building energy code; and

(C) consider, in consultation with the Environmental Protection Agency and other Federal agencies, and where appropriate contain, measures with regard to radon and other indoor air pollutants.

[(3)(A) Not later than 1 year after the date of enactment of this paragraph, the Secretary shall establish, by rule, revised Federal building energy efficiency performance standards that require that—

[(i) if life-cycle cost-effective for new Federal buildings—

[(I) the buildings be designed to achieve energy consumption levels that are at least 30 percent below the levels established in the version of the ASHRAE Standard or the International Energy Conservation Code, as appropriate, that is in effect as of the date of enactment of this paragraph; and

[(II) sustainable design principles are applied to the siting, design, and construction of all new and replacement buildings;

[(ii) if water is used to achieve energy efficiency, water conservation technologies shall be applied to the extent that the technologies are life-cycle cost-effective; and

[(iii) if lifecycle cost-effective, as compared to other reasonably available technologies, not less than 30 percent of the hot water demand for each new Federal building or Federal building undergoing a major renovation be met through the installation and use of solar hot water heaters.

[(B) Not later than 1 year after the date of approval of each subsequent revision of the ASHRAE Standard or the International Energy Conservation Code, as appropriate, the Secretary shall determine, based on the cost-effectiveness of the requirements under the amendment, whether the revised standards established under this paragraph should be updated to reflect the amendment.]

(3) REVISED FEDERAL BUILDING ENERGY EFFICIENCY PERFORMANCE STANDARDS; CERTIFICATION FOR GREEN BUILDINGS.—

(A) REVISED FEDERAL BUILDING ENERGY EFFICIENCY PERFORMANCE STANDARDS.—

(i) IN GENERAL.—Not later than 1 year after the date of enactment of the All-of-the-Above Federal Building Energy Conservation Act of 2019, the Secretary shall establish, by regulation, revised Federal building energy efficiency performance standards that require that—

(I) unless demonstrated not to be life-cycle cost-effective for new Federal buildings and Federal buildings with major renovations—

(aa) the buildings shall be designed to achieve energy consumption levels that are not less than 30 percent below the levels established in the most recently published version of the ASHRAE Standard or the International Energy Conservation Code, as appropriate, on the date of enactment of the All-of-the-Above Federal Building Energy Conservation Act of 2019, unless the Secretary determines, pur-

suant to subparagraph (B), that a subsequent version of such a standard or code shall apply; and

(bb) sustainable design principles are applied to the location, siting, design, and construction of all new Federal buildings and replacement Federal buildings;

(II) if water is used to achieve energy efficiency, water conservation technologies shall be applied to the extent that the technologies are life-cycle cost-effective; and

(III) if life-cycle cost-effective, as compared to other reasonably available technologies, not less than 30 percent of the hot water demand for each new Federal building or Federal building undergoing a major renovation shall be met through the installation and use of solar hot water heaters.

(B) UPDATES.—Not later than 1 year after the date of approval of each subsequent revision of the ASHRAE Standard or the International Energy Conservation Code, as appropriate, the Secretary shall determine whether the revised standards established under subparagraph (A) and the Federal building energy standards established under paragraph (1) should be updated to reflect the revisions, based on the energy savings and life-cycle cost-effectiveness of the revisions.

[(C) In the budget request] *(C) BUDGET REQUEST.—In the budget request of* the Federal agency for each fiscal year and each report submitted by the Federal agency under section 548(a) of the National Energy Conservation Policy Act (42 U.S.C. 8258(a)), the head of each Federal agency shall include—

(i) a list of all new Federal buildings owned, operated, or controlled by the Federal agency; and

(ii) a statement specifying whether the Federal buildings meet or exceed the revised standards established under this paragraph.

(D) Not later than 1 year after the date of enactment of the Energy Independence and Security Act of 2007, the Secretary shall establish, by rule, revised Federal building energy efficiency performance standards [that require that] *that require the following:*

(i) For new Federal buildings and Federal buildings undergoing major renovations, with respect to which the Administrator of General Services is required to transmit a prospectus to Congress under section 3307 of title 40, in the case of public buildings (as defined in section 3301 of title 40), or of at least $2,500,000 in costs adjusted [annually for inflation for other buildings:

(I) The buildings shall be designed so that the fossil fuel-generated energy consumption of the buildings is reduced, as compared with such energy consumption by a similar building in fiscal year 2003 (as measured by Commercial Buildings Energy Consumption Survey or Residential Energy Consumption Survey data from

the Energy Information Agency), by the percentage specified in the following table:

[Fiscal Year	Percentage Reduction
2010	55
2015	65
2020	80
2025	90
2030	100.]

[(II) Upon petition by an agency subject to this subparagraph, the Secretary may adjust the applicable numeric requirement under subclause (I) downward with respect to a specific building, if the head of the agency designing the building certifies in writing that meeting such requirement would be technically impracticable in light of the agency's specified functional needs for that building and the Secretary concurs with the agency's conclusion. This subclause shall not apply to the General Services Administration.

[(III) Sustainable design principles] *annually for inflation for other buildings, sustainable design principles* shall be applied to the siting, design, and construction of such buildings. Not later than 90 days after the date of enactment of the Energy Independence and Security Act of 2007, the Secretary, after reviewing the findings of the Federal Director under section 436(h) of that Act, in consultation with the Administrator of General Services, and in consultation with the Secretary of Defense for considerations relating to those facilities under the custody and control of the Department of Defense,shall identify a certification system and level for green buildings that the Secretary determines to be the most likely to encourage a comprehensive and environmentally-sound approach to certification of green buildings. The identification of the certification system and level shall be based on a review of the Federal Director's findings under section 17092(h) of this title and the criteria specified in clause (iii), shall identify the highest level the Secretary determines is appropriate above the minimum level required for certification under the system selected, and shall achieve results at least comparable to the system used by and highest level referenced by the General Services Administration as of the date of enactment of the Energy Independence and Security Act of 2007. Within 90 days of the completion of each study required by clause (iv), the Secretary, in consultation with the Administrator of General Services, and in consultation with the Secretary of Defense for considerations relating to those facilities under the custody and control of the Department of Defense, shall review and update the certification system and level, taking into account the conclusions of such study.

(ii) In establishing criteria for identifying major renovations that are subject to the requirements of this subparagraph, the Secretary shall take into account the scope, de-

gree, and types of renovations that are likely to provide significant opportunities for substantial improvements in energy efficiency.

(iii) In identifying the green building certification system and level, the Secretary shall take into consideration—

(I) the ability and availability of assessors and auditors to independently verify the criteria and measurement of metrics at the scale necessary to implement this subparagraph;

(II) the ability of the applicable certification organization to collect and reflect public comment;

(III) the ability of the standard to be developed and revised through a consensus-based process;

(IV) an evaluation of the robustness of the criteria for a high-performance green building, which shall give credit for promoting—

(aa) efficient and sustainable use of water, energy, and other natural resources;

(bb) use of renewable energy sources;

(cc) improved indoor environmental quality through enhanced indoor air quality, thermal comfort, acoustics, day lighting, pollutant source control, and use of low-emission materials and building system controls; and (dd) such other criteria as the Secretary determines to be appropriate; and

(V) national recognition within the building industry.

(iv) At least once every 5 years, and in accordance with section 17092 of this title, the Administrator of General Services shall conduct a study to evaluate and compare available third-party green building certification systems and levels, taking into account the criteria listed in clause (iii).

(v) The Secretary may by rule allow Federal agencies to develop internal certification processes, using certified professionals, in lieu of certification by the certification entity identified under ⟦clause (i)(III)⟧ *clause (i)*. The Secretary shall include in any such rule guidelines to ensure that the certification process results in buildings meeting the applicable certification system and level identified under ⟦clause (i)(III)⟧ *clause (i).* An agency employing an internal certification process must continue to obtain external certification by the certification entity identified under ⟦clause (i)(III)⟧ *clause (i)* for at least 5 percent of the total number of buildings certified annually by the agency.

(vi) With respect to privatized military housing, the Secretary of Defense, after consultation with the Secretary may, through rulemaking, develop alternative criteria to those established by ⟦subclauses (I) and (III)⟧ of clause (i) that achieve an equivalent result in terms of ⟦energy savings, sustainable design, and green building performance⟧ *sustainable design and green building performance.*

(vii) In addition to any use of water conservation technologies otherwise required by this section, water con-

servation technologies shall be applied to the extent that the technologies are life-cycle cost-effective.

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SECTION 306. FEDERAL COMPLIANCE.

(a) PROCEDURES.—[(1) The head] *(1) IN GENERAL.—The head* of each Federal agency shall adopt procedures necessary to [assure that new Federal buildings] *ensure that new Federal buildings and Federal buildings with major renovations* meet or exceed the Federal building energy standards established under section 305.

[(2) The Federal] *(2) APPLICABILITY.—*

(A) IN GENERAL.—The Federal building energy standards established under section 6834 of this title shall apply to new buildings *and Federal buildings with major renovations* under the jurisdiction of the Architect of the Capitol. [The Architect shall adopt procedures necessary to assure that such buildings meet or exceed such standards].

(B) PROCEDURES.—The Architect of the Capitol shall adopt procedures necessary to ensure that the buildings referred to in subparagraph (A) meet or exceed the standards described in that subparagraph.

[(b) CONSTRUCTION OF NEW BUILDINGS.—The head of a Federal agency may expend Federal funds for the construction of a new Federal building] *(b) EXPENDITURES.—The head of a Federal agency may expend Federal funds for the construction of a new Federal building or a Federal building with major renovations* only if the building meets or exceeds the appropriate Federal building energy standards established under section 305.

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