ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 80

[EPA–HQ–OAR–2018–0775; FRL–9994–87–OAR]

RIN 2060–AU34

Modifications to Fuel Regulations To Provide Flexibility for E15; Modifications to RFS RIN Market Regulations

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is adopting a new statutory interpretation and making corresponding regulatory changes to allow gasoline blended with up to 15 percent ethanol to take advantage of the 1-pound per square inch (psi) Reid Vapor Pressure (RVP) waiver afforded under the Clean Air Act (CAA). In doing so, EPA is finalizing an interpretive rulemaking which defines gasoline blended with up to 15 percent ethanol as ''substantially similar'' to the fuel used to certify Tier 3 motor vehicles. Finally, EPA is making regulatory changes to modify certain elements of the Renewable Fuel Standard (RFS) compliance system, in order to improve functioning of the renewable identification number (RIN) market and prevent market manipulation.

DATES: Amendatory instructions 4–10 are effective July 10, 2019. Amendatory instructions 1–3 and 11–12 are effective June 5, 2019.

Operational dates: For operational purposes under the Clean Air Act, the amendments to 40 CFR part 80, subpart M and corresponding portions of the preamble are effective as of July 10, 2019, and the amendments to 40 CFR part 80, subparts B and N; corresponding portions of the preamble; and the interpretation of ''substantially similar'' in the appendix to this **Federal Register** document are effective as of May 30, 2019.

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2018–0775. 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.,* CBI or other information whose disclosure is restricted by statute. Certain other material is not available on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through *http://www.regulations.gov.*

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SUPPLEMENTARY INFORMATION:

Effective date. Section 553(d)(1) of the Administrative Procedure Act, 5 U.S.C. 553(d)(1), provides that final rules shall not become effective until 30 days after publication in the **Federal Register** ''except . . . a substantive rule which grants or recognizes an exemption or relieves a restriction.'' The purpose of this provision is to ''give affected parties a reasonable time to adjust their behavior before the final rule takes effect.'' *Omnipoint Corp.* v. *Fed. Commc'n Comm'n,* 78 F.3d 620, 630 (D.C. Cir. 1996); *see also United States* v. *Gavrilovic,* 551 F.2d 1099, 1104 (8th Cir. 1977) (quoting legislative history). However, when the agency grants or recognizes an exemption or relieves a restriction, affected parties do not need a reasonable time to adjust because the effect is not adverse. EPA is issuing this final rule under CAA sec. 307(d), which states ''The provisions of section 553 through 557 . . . of Title 5 shall not, except as expressly provided in this section, apply to actions to which this subsection applies.'' CAA sec. 307(d)(1). Thus, APA sec. 553(d) does not apply to this rule. EPA is nevertheless acting consistently with the policies underlying APA sec. 553(d) in making a portion of this rule effective immediately. The regulatory amendments to 40 CFR part 80, subparts B and N, relieve a restriction on the sale of E15 during the period of May 1 through September 15, which the 40 CFR part 80 regulations define as the ''regulatory control period.'' This action will enable E15 to take advantage of the 1-pound per square inch Reid Vapor Pressure waiver that currently applies to E10 during the summer months. Accordingly, it is in keeping with the policy underlying the APA for the regulatory amendments to 40 CFR part 80, subparts B and N, to take effect immediately. In addition, APA sec. 553(d) contains an exception for interpretive rules; thus, it is consistent with the APA to make the interpretation of ''substantially similar'' in the appendix to this **Federal Register** notice effective immediately. Finally, this CAA sec. 307(d) rule is promulgated upon signature. For operational purposes under the CAA, EPA is making the amendments to 40 CFR part 80, subparts B and N; corresponding portions of the preamble; and the interpretation of ''substantially similar'' in the appendix to this **Federal Register** notice effective as of May 30, 2019, which is the date of signature.

Potentially affected entities. Entities potentially affected by this final rule include those involved with the production, importation, distribution, marketing, and retailing of transportation fuels, including gasoline and diesel fuel or renewable fuels such as ethanol, biodiesel, and renewable diesel. Potentially affected categories include:

Category	NAICS [1] codes	SIC [2] codes	Examples of potentially affected entities
Industry	324110	2911	Petroleum refineries.
Industry	325193	2869	Ethyl alcohol manufacturing.
Industry	325199	2869	Other basic organic chemical manufacturing.
Industry	424690	5169	Chemical and allied products merchant wholesalers.
Industry	424710	5171	Petroleum bulk stations and terminals.
Industry	424720	5172	Petroleum and petroleum products merchant wholesalers.
Industry	454319	5989	Gasoline service stations.
Industry	447190	5541	Marine service stations.

[1] North American Industry Classification System (NAICS).
[2] Standard Industrial Classification (SIC).

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. This table lists the types of entities that EPA is now aware could potentially be affected by

this action. Other types of entities not listed in the table could also be affected. To determine whether your entity will be affected by this action, you should carefully examine the applicability criteria in 40 CFR part 80. If you have any questions regarding the applicability of this proposed action to a particular entity, consult the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

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I. Executive Summary

On October 11, 2018, the President directed [1] EPA to initiate a Clean Air Act (CAA or the Act) rulemaking to extend to gasoline blends containing 15 percent ethanol by volume, commonly referred to as E15, the 1-psi (pound per square inch) Reid Vapor Pressure (RVP) waiver that currently applies to E10 (gasoline containing up to 10 percent ethanol by volume) during the summer ozone control season. The President also directed EPA to consider four reforms to the Renewable Fuel Standard (RFS) compliance system: (1) Prohibiting entities other than obligated parties from purchasing separated Renewable Identification Numbers (RINs); (2) requiring public disclosure when RIN holdings held by an individual actor exceed specified limits; (3) limiting the length of time a non-obligated party can hold RINs; and (4) requiring the retirement of RINs for the purpose of compliance be made in real time.

A. Purpose of This Action

The objectives of this action are twofold. First, this rulemaking will take steps intended to create parity in the way the RVP of both E10 and E15 fuels is treated under EPA regulations. Second, this action finalizes reforms to RIN regulations intended to increase transparency and deter potential manipulative and anti-competitive behaviors in the RIN market.

[1] See President Donald J. Trump Is Expanding Waivers for E15 and Increasing Transparency in the RIN Market: *https://www.whitehouse.gov/briefings-statements/president-donald-j-trump-expanding-waivers-e15-increasing-transparency-rin-market.*

Further, in promulgating this rule, EPA is seeking to take justified actions to remove barriers which unnecessarily limit the potential growth in biofuel consumption, much as it did in 1987 for the original 1-psi waiver as markets were evolving. As is also clear from the text of the Energy Independence and Security Act of 2007, and the associated 36 billion gallon mandate by 2022, that Congress intended to promote and accommodate expanded biofuel use and outlined greenhouse gas savings. While this rule alone is not expected to increase the availability of E15, it removes one barrier to such an outcome.

B. Summary of the Major Provisions of This Action

1. E15 Reid Vapor Pressure

We are modifying the volatility requirements for E15 during the summer season or the period of May 1 through September 15.[2] [3] The changed volatility provisions for these blends will allow E15 to receive the benefit of the

[2] For purposes of this preamble, E15 refers to gasoline-ethanol blended fuels that contain greater than 10 volume percent and no more than 15 volume percent ethanol content. Under EPA regulations at 40 CFR part 80, we broadly define gasoline as ''any fuel sold in any State for use in motor vehicles and motor vehicle engines, and commonly or commercially known or sold as gasoline.'' We have also clearly stated that any fuel that is predominantly gasoline is considered gasoline for purposes complying with EPA's fuels regulations at 40 CFR parts 79 and 80 and relevant provisions under the CAA (see 79 FR 23557 (April 28, 2014) and 81 FR 80841–80843 (November 16, 2016)). Gasoline-ethanol blended fuels (referred to as ''gasoline-ethanol blends'' in this action) are fuels under the CAA and gasoline-ethanol blended fuels containing no more than 50 volume percent ethanol are defined as gasoline under EPA's regulations. This preamble sometimes refers to gasoline or to gasoline-ethanol blended fuels in terms of the ethanol content of the fuel (*e.g.,* ''E10'' or ''E15''). At other times, this preamble uses the term gasoline to be inclusive of all fuels that are predominantly composed of gasoline, which would include, but is not limited to, all gasoline-ethanol blended fuels containing no more than 50 volume percent ethanol.

[3] CAA sec. 211(h)(1) requires EPA to establish volatility requirements—that is, a restriction on Reid Vapor Pressure (RVP)—during the high ozone season. To implement these requirements, EPA defines ''high ozone season'' at 40 CFR 80.27 as the period from June 1 to September 15. The regulations at 40 CFR 80.27 also specify that all parties except for retailers must make and distribute gasoline meeting the RVP standards at 40 CFR 80.27 from May 1 through September 15 and calls this period the ''regulatory control period.'' The E15 partial waivers impose the 9.0 psi RVP limit on E15 from May 1 through September 15. See 75 FR 68094 (November 4, 2010) and 76 FR 4662 (January 26, 2011). In general practice by industry and for purposes of this preamble, the high ozone season and regulatory control period is referred to as the ''summer'' or ''summer season'' and gasoline produced to be used during the regulatory control period and high ozone season is called ''summer gasoline.'' EPA's regulations do not impose any volatility requirements on any type of blend of gasoline outside of the summer season.

provision at CAA sec. 211(h)(4), commonly referred to as ''the 1-psi waiver.'' The 1-psi waiver allows gasoline-ethanol blends to have a higher RVP [4] than would be allowed under CAA sec. 211(h)(1) and the corresponding volatility provisions, which prohibit the RVP of gasoline from exceeding 9.0 psi during the summer.[5] Under EPA's previous interpretation of CAA sec. 211(h)(4), and corresponding regulations, only blends of ethanol and gasoline containing at least 9 percent and no more than 10 percent ethanol by volume (E10) were granted the 1-psi waiver.

EPA is finalizing three steps to accomplish this change. First, we are adopting a new interpretation of CAA sec. 211(h)(4). Second, we are finalizing two approaches to address CAA sec. 211(f). In the first of these approaches, we find that E15 is ''substantially similar'' (sub sim) to Tier 3 E10 certification fuel for use in MY2001 and newer light-duty vehicles.[6] In the second of these approaches, we maintain our interpretation of CAA sec. 211(f), making it clear that the conditions on the CAA sec. 211(f)(4) waivers granted to E15 in 2010 and 2011 do not restrict the application of the 1-psi waiver to downstream oxygenate blenders in most circumstances. Third and finally, we are modifying our regulations to effect two changes: (1) Remove limitations in our regulations on the volatility of E15 promulgated in the E15 Misfueling Mitigation Rule (''MMR'') that were put in place in keeping with the prior interpretation of CAA sec. 211(h)(4); [7] and (2) modify the associated product transfer document (PTD) requirements also promulgated in the MMR.

As a result of this action, parties will be able to make, distribute, and sell E15 made with the same conventional blendstock for oxygenate blending (CBOB) [8] that is used to make E10 by oxygenate blenders during the summer.[9] E15 will be held to the same gasoline volatility standards that currently apply to E10, maintaining substantially the same level of emissions performance as E10 since E15 made from the same CBOB as is used to make E10 during the summer would have slightly lower RVP than E10 and would be expected to have similar emissions performance as discussed in Sections II.C and II.E.

2. RIN Market Reform

EPA takes claims of RIN market manipulation seriously. Though, as stated in the proposal and reaffirmed in this action, we have yet to see data-based evidence of such behavior, the potential for manipulation is a concern. Accordingly, we are finalizing two reforms to increase our market monitoring capabilities, bring more transparency to the RIN market, and discourage RIN holdings in excess of normal business practices. Specifically, we are finalizing the following RIN market reforms:

- Requiring public disclosure when RIN holdings held by an individual actor exceed specified limits.
- Requiring the reporting of additional price and affiliate data to EPA.

First, we are finalizing two RIN holding thresholds that will work in tandem to discourage potential accumulation of market power. These thresholds will apply to holdings of separated D6 RINs only.[10] If a non-obligated party's end-of-day separated D6 RIN holdings exceed three percent of the total implied conventional biofuel volume requirement, it has triggered the primary threshold. If an obligated party's end-of-day separated D6 RIN holdings exceed three percent of the total implied conventional biofuel volume requirement and exceed 130 percent of its individual implied conventional renewable volume obligation (RVO), it has triggered the secondary threshold. We are requiring that parties make calculations of daily RIN holdings and report new information in a quarterly report, including a yes/no certification statement about exceeding the threshold and a list of all RIN-holding corporate affiliates and all contractual affiliates. We will publish on our website the names of any parties that report exceeding the thresholds.

Second, we are finalizing additional reporting requirements that will enhance EPA's oversight capabilities of RIN market behavior. We are finalizing requirements for parties to follow certain conventions when reporting RIN prices to EPA and to report whether the RIN transaction was on the spot market or as a result of a term contract.

Third, we are confirming our intention to take non-regulatory steps after promulgation of this action to update business rules in EMTS to require that both parties in a RIN transaction enter the same RIN price and to employ a third-party market monitor to conduct analysis of the RIN market, including screening for potential anti-competitive behavior. We intend to incorporate new information reported to EPA as a result of this rulemaking into such RIN market analysis.

Finally, we are not taking final action on three of the reforms that were proposed. These reforms are related to RIN retirement frequency, limitations on the parties that can purchase a D6 RIN, and the duration parties can hold D6 RINs. We have decided to defer the decision on whether or not to finalize these three proposed reforms as we conduct more thorough analyses of the RIN market and of the manipulation concerns presented by some stakeholders, with help from a third party. If, after reviewing that data and

[4] RVP is a measure of the volatility of gasoline. Gasoline must have volatility in the proper range to prevent driveability, performance, and emissions problems. If the volatility is too low, the gasoline will not ignite properly; if the volatility is too high, the vehicle may experience vapor lock. Importantly for this rule, excessively high volatility also leads to increased evaporative emissions from the vehicle. Vehicle evaporative emission control systems are designed and certified on gasoline with a volatility of 9.0 psi RVP. Higher volatility gasoline may overwhelm the vehicle's evaporative control system, leading to a condition described as ''breakthrough'' of the canister and mostly uncontrolled evaporative emissions. The regulations at 40 CFR part 86 defines evaporative emissions as ''hydrocarbons emitted into the atmosphere from a motor vehicle, other than exhaust and crankcase emissions.'' For purposes of this preamble, evaporative emissions are generally referring to volatile organic compounds (VOCs) present in gasoline that evaporate within the fuel system. This differs from tailpipe or exhaust emissions which are defined under the regulations at 40 CFR part 86 as ''substances emitted to the atmosphere from any opening downstream from the exhaust port of a motor vehicle engine.'' For purposes of this preamble, when we refer to exhaust emissions, we are generally referring to exhaust emissions that are controlled in motor vehicles under Title II of the Clean Air Act.

[5] In a few areas, specified at 40 CFR 80.27, the RVP standard is 7.8 psi. In these areas, after application of the 1-psi waiver, gasoline-ethanol blended fuels covered by the 1-psi waiver could have an RVP of up to 8.8 psi.

[6] EPA last issued an interpretative rulemaking for what it considers sub sim for gasoline in 2008. See 73 FR 22281 (April 25, 2008).

[7] See 76 FR 44406 (July 25, 2011).

[8] CBOB is the base gasoline typically made for blending with 10 percent ethanol in conventional gasoline areas of the country.

[9] As previously noted, EPA's regulations do not impose any volatility requirements on any type of blend of gasoline outside of the summer season. EPA does not have volatility limitations on gasoline outside of the summer season. Therefore, E15 can already be made from the same CBOB used to produce E10 outside of the summer season. The rest of the year (outside of the summer season) is commonly referred to as the ''winter season'' or ''winter.''

[10] RINs specify a ''D-code'' corresponding to the renewable fuel category applicable to the fuel, as determined by the feedstock used, fuel type produced and GHG emissions of the fuel, among other characteristics. There are five different D-Codes for RINs in the RFS program. D3 RINs are cellulosic biofuel RINs. D4 RINs are biomass-based diesel (including both biodiesel and renewable diesel) RINs. D5 RINs are advanced biofuel RINs. D6 RINs are conventional biofuel RINs (primarily corn ethanol). D7 RINs are cellulosic diesel RINs which meet the requirements for both cellulosic biofuel and biomass-based diesel.

conducting additional market analysis, we determine that it would be prudent to finalize one or more of these proposed reforms in the future, we will share the analysis that has led us to believe it could be appropriate and will allow time for parties to comment before we proceed with a final rule.

C. Severability

The actions we are taking with regard to Section II are made pursuant to our authority under CAA secs. 211(c), 211(f), and 211(h). The actions we are taking with regard to Section III are made pursuant to our authority under Clean Air Act sec. 211(o). We consider Section II and the regulatory provisions we are finalizing under 40 CFR part 80, subparts B and N, to be severable from Section III and the regulatory provisions we are finalizing under 40 CFR part 80, subpart M, as these are two separate actions, each of which operates independently from the other.

II. Application of the 1-psi Waiver to E15

In this action, we are finalizing changes to the volatility provisions for E15 during the summer season based on revised interpretations of CAA sec. 211(h)(4) and CAA sec. 211(f). The changed volatility provisions for E15 will apply the 1-psi waiver to E15 pursuant to CAA sec. 211(h)(4). This provision allows certain gasoline-ethanol blends to have a higher RVP than would otherwise be allowed under CAA sec. 211(h)(1) and the corresponding volatility regulations that prohibit the RVP of gasoline from exceeding 9.0 psi during the summer. Prior to this rulemaking, EPA's interpretation of the statute and the corresponding regulations only applied the 1-psi waiver to gasoline-ethanol blends containing at least 9 percent and no more than 10 volume percent ethanol. The interpretation in this action represents a change in EPA's prior interpretation and, as explained in more detail below, is appropriate in light of the increased presence of E15 in the gasoline marketplace. This interpretation is further supported by the fact that the conditions that led us to provide the original 1-psi waiver for E10 in 1990 are equally applicable to E15 today.

The volatility of E15 is also limited by CAA sec. 211(f). CAA sec. 211(f) prohibits the introduction into commerce of fuels and fuel additives unless they either: (1) Are substantially similar to fuels or fuel additives utilized in the certification of motor vehicles, or (2) receive a waiver from the sub sim requirement in accordance with CAA sec. 211(f)(4). EPA granted E15 CAA sec. 211(f)(4) waivers in 2010 and 2011, subject to certain conditions. Under the waiver conditions, the RVP limit for E15 is 9.0 psi from May 1 through September 15. In order to effectuate the 1-psi waiver under CAA sec. 211(h)(4) and permit the introduction of E15 at the higher RVP level into commerce, we are addressing the statutory provisions under both CAA sec. 211(f) and (h).

As discussed in Section I, we are taking this action in response to the Presidential Directive to provide E15 the 1-psi waiver. All actions we are taking under both CAA sec. 211(h) and CAA sec. 211(f)(1) are in furtherance of that goal. EPA is taking several steps to provide E15 the 1-psi waiver. First, we are finalizing our proposed interpretation of CAA sec. 211(h)(4). Under this new interpretation, gasoline-ethanol blends containing at least 10 percent ethanol that are either substantially similar under CAA sec. 211(f)(1) or that have been granted a waiver under CAA sec. 211(f)(4) would receive the 1-psi waiver, including E15.[11]

Second, we are finalizing an interpretative rulemaking that defines E15 with an RVP of 9.0 psi RVP in the summer as sub sim to the fuel utilized to certify Tier 3 vehicles when used in model year (MY) 2001 and newer light-duty motor vehicles, subject to certain criteria. After application of the CAA sec. 211(h)(4) 1-psi waiver, this new definition of sub sim will allow E15 to be introduced into commerce with an RVP of 10.0 psi during the summer. Additionally, we maintain our interpretation of CAA sec. 211(f), making it clear that the conditions on the CAA sec. 211(f)(4) waivers granted to E15 in 2010 and 2011 do not restrict the application of the 1-psi waiver to downstream oxygenate blenders in most circumstances.

Third, to effectuate our new interpretations under CAA sec. 211(h) and 211(f)(1), we are finalizing the following changes to EPA's fuels regulations: (1) Removing limitations on the volatility of E15 in our regulations, that were put in place to implement the prior interpretation of CAA sec. 211(h)(4); and (2) modifying the associated Product Transfer Document (''PTD'') requirements.[12]

The actions we are taking, including those pursuant to our authorities under CAA secs. 211(f) 211(h), are all taken to establish a single, unified program that allows the introduction into commerce of E15 at 10.0 psi RVP during the summer driving season. For example, the actions we are taking under CAA sec. 211(f) are directly related to our new interpretation of CAA sec. 211(h)(4), and in the absence of this new CAA sec. 211(h)(4) interpretation, we would not be taking these actions. Additionally, the restrictions adopted as part of the E15 sub sim determination under CAA sec. 211(f)(1) are necessary to prevent the use of E15 in vehicles, engines, and equipment other than MY2001 and newer light-duty vehicles, and absent those restrictions and the limited nature of the sub sim determination, we would not consider E15 to be sub sim to Tier 3 certification fuel. Finally, our amendments to 40 CFR part 80 subparts B and N are pursuant to our actions under CAA secs. 211(f) and (h)(4). In sum, all actions we are taking today constitute a single, cohesive effort, and as such we do not intend for any of these individual actions to be severable. In the event it is determined we lack authority to adopt any element of this program, EPA believes the other elements of the program cannot be justified in isolation.

The following subsections provide further details on these changes, as well as discussions on the potential effects of this action on emissions and the economy. First, we provide background on both the relevant statutory provisions and the history of gasoline-ethanol blends in the fuel marketplace. We then discuss our new interpretation of CAA sec. 211(h), under which the 1-psi waiver applies to blends up to E15. Third, we provide a discussion of our new definition of ''substantially similar'' under CAA sec. 211(f)(1) and its application to E15. Finally, we provide discussion of the potential economic and environmental impacts of this action.

A. Background

The discussion below provides general background explaining the CAA provisions that are relevant to this action, as well as a description of prior EPA actions taken under those

[11] While any gasoline-ethanol blend containing at least 10 percent ethanol would receive the 1-psi waiver, that does not mean that gasoline-ethanol blends higher than E15 can be introduced into commerce at 10.0 psi. As discussed further below, in order for these fuels to be introduced into commerce, they must be substantially similar to certification fuel or obtain a waiver from the substantially similar requirement. Therefore, once this action is finalized, only E10 and E15 may be introduced into commerce at 10.0 psi.

[12] We also find that our existing understanding of the statute that CAA sec. 211(f), generally, and any waiver conditions imposed under CAA sec. 211(f)(4) more specifically, only apply to fuel and fuel additive manufacturers and thus provide an additional basis for the regulatory changes we are making in this action.

provisions. It also provides background on the presence of ethanol in the fuels marketplace.

1. Summary of Statutory Framework

The Air Quality Act of 1967 and the CAA of 1970 established the basic framework for EPA's fuels regulations. CAA sec. 211(a) allows EPA to designate fuels and fuel additives for registration. CAA sec. 211(b) sets forth registration requirements for fuels and fuel additives and authorizes EPA to require health and environmental effects testing for the registration of fuels and fuel additives. CAA sec. 211(c) authorizes EPA to regulate or prohibit fuels or additives for use in motor (or nonroad) vehicles or engines if: (A) ''any fuel or fuel additive or any emission product of such fuel or fuel additive causes, or contributes, to air pollution . . . that may reasonably be anticipated to endanger the public health or welfare,'' or (B) ''if emission products of such fuel or fuel additive will impair to a significant degree the performance of any emission control device or system.'' CAA sec. 211(c) also provides that in order to place a control or prohibition on a fuel or fuel additive under clause (A), EPA must consider ''all relevant medical and scientific evidence available . . . including consideration of other technologically or economically feasible means of achieving emission standards.'' In order to place a control or prohibition on a fuel or fuel additive under clause (B), EPA must consider ''available scientific and economic data, including a cost benefit analysis comparing emission control devices or systems which are or will be in general use and require the proposed control'' and those that do not require the proposed control.

In the CAA Amendments of 1977, Congress established CAA sec. 211(f)(1), which prohibits manufacturers from first introducing into commerce any fuel or fuel additive for general use in light-duty vehicles that is not ''substantially similar to any fuel or fuel additive utilized in the certification of any model year 1975, or subsequent model year, vehicle.'' In a report accompanying the enactment of this provision in addition to 211(c), Congress explained that ''the intention of this [section] is to prevent the use of any new or recently introduced additive in those unleaded grades of gasoline . . . which may impair emission performance of vehicles.'' [13] The Senate Report also states that the sub sim provision was enacted in recognition that ''due to the delay associated with statutory procedural safeguards of [CAA sec. 211(c)]'' parties could introduce fuel with negative impacts on emission controls before a CAA sec. 211(c) action could be completed.[14]

If a fuel or fuel additive is not sub sim, a fuel or fuel additive manufacturer may obtain a waiver under CAA sec. 211(f)(4) [15] if the manufacturer can demonstrate that the new fuel or fuel additive ''will not cause or contribute to a failure of any emission control device or system (over the useful life of the motor vehicle, motor vehicle engine, nonroad engine, or nonroad vehicle in which such device or system is used) to achieve compliance by the vehicle or engine with the emission standards with respect to which it has been certified.'' Together, CAA sec. 211(f)(1) and (f)(4) prevent fuels and fuel additives from being introduced into commerce that would degrade the emission performance of the existing fleet and protect vehicle manufacturers from their vehicles consequently failing emission standards in use.

In the CAA Amendments of 1990, Congress added CAA sec. 211(f)(1)(B), which extends the prohibition from first introduction into commerce to ''any fuel or fuel additive for use by any person in motor vehicles manufactured after model year 1974 which is not substantially similar to any fuel or fuel additive utilized in the certification of any model year 1975, or subsequent model year vehicle, or engine.'' [16]

Also, in the CAA Amendments of 1990, Congress added CAA sec. 211(h) to address the volatility of gasoline, which largely codified EPA's then-new RVP regulations.[17] Accordingly, entirely separate from CAA sec. 211(f), CAA sec. 211(h)(1) prohibits the sale of gasoline with an RVP in excess of 9.0 psi during the high ozone season (while allowing EPA to promulgate more stringent RVP requirements for nonattainment areas),[18] and CAA sec. 211(h)(4) provides a 1.0 psi RVP allowance for ''fuel blends containing gasoline and 10 percent'' ethanol.

Relevant to our discussion of CAA sec. 211(f)(1) are CAA sec. 206 and 213. These provisions provide EPA with authority to establish vehicle and engine certification procedures; CAA sec. 213 also provides EPA with authority to establish emissions standards. CAA sec. 206, ''Motor vehicle and motor vehicle engine compliance testing and certification,'' authorizes EPA to established methods and procedures for testing whether a motor vehicle or motor vehicle engine conforms with our motor vehicle emissions standards promulgated under CAA sec. 202. CAA sec. 213, enacted in the CAA Amendments of 1990, authorizes EPA to promulgate regulations containing emissions standards for nonroad engines and nonroad vehicles.

In the Energy Policy Act of 2005 (''EPAct'') Congress added sec. 211(o) to the CAA creating the Renewable Fuel Standard (RFS), and then in the Energy Independence and Security Act of 2007 (''EISA'') modified and greatly expanded the program. The RFS program places obligations on refiners and importers to expand the use of renewable fuels such as ethanol in the nation's fuel supply.

2. Background on Ethanol Use Over Time

Prompted by concerns about reliance on foreign sources of oil and a desire to support domestic agriculture, several corn-based ethanol plants were constructed in the 1970s. In 1978, after a CAA sec. 211(f)(4) waiver application was submitted for E10, E10 was granted a CAA sec. 211(f)(4) waiver by operation of law.[19] The CAA sec. 211(f)(4) waiver along with an excise tax exemption for gasoline containing ethanol resulted in the growth in the production of ethanol through the mid-1980s at the rate of about 100 million gallons per year. In the years following, ethanol use in gasoline continued to grow as a result of a combination of state and federal programs and policies, as well as

[13] See S. Rep. 95–127 (95th Congress, 1st Session) at 90–91. See also *Motor Vehicle Manufacturers Association of the U.S., Inc.* v. *EPA,* 768 F.2d 385, 390 n.7 (D.C. Cir. 1985).

[14] Id.

[15] Quoted above is the current formulation of CAA sec. 211(f)(4). When enacted in 1977, the waiver provision stated a waiver could be granted ''if [the administrator] determines that the applicant has established that such fuel or fuel additive or a specified concentration thereof, and the emission products of such fuel or fuel additive or specified concentration thereof, will not cause or contribute to a failure of any emission control device or system (over the useful life of any vehicle in which such device or system is used) to achieve compliance by the vehicle with the emission standards with respect to which it has been certified pursuant to section 206.'' See CAA Amendments of 1977.

[16] See 75 FR 68094, 68145 (Nov. 4, 2010).

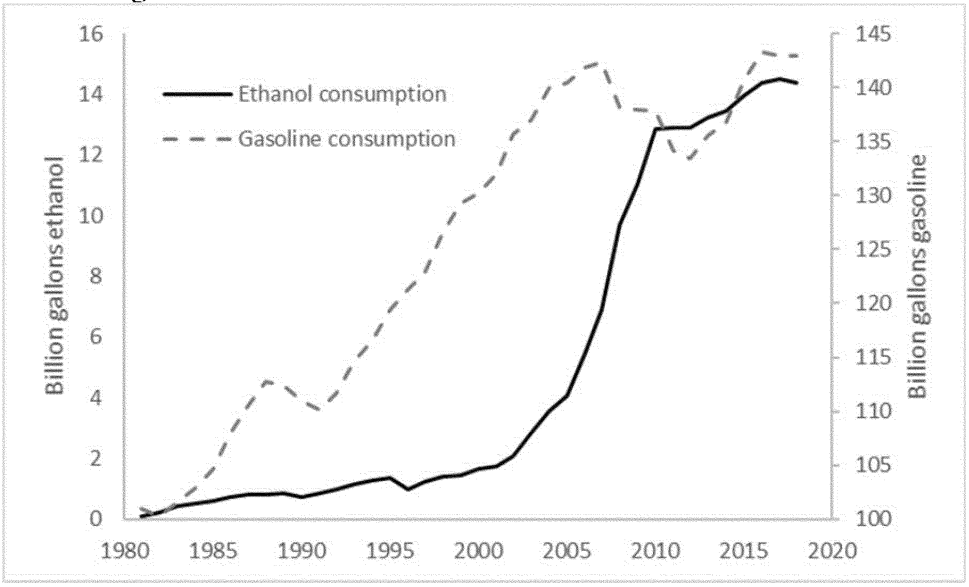
[17] See 54 FR 11868 (March 22, 1989) (Phase I) and 55 FR 23658 (June 11, 1990) (Phase II).

[18] A ''nonattainment area'' is an area designated as not meeting a National Ambient Air Quality Standard, or as contributing to another, nearby area's failure to meet such standard. See generally CAA sec. 107.

[19] See 44 FR 20777 (April 6, 1979). Under the CAA as it existed in 1978, unless EPA acted to deny a waiver application within 270 days, the waiver was deemed granted by operation of law. See 42 U.S.C. 7545(f)(4) (1978). In EISA, Congress revised this provision; under the statute as it now exists, EPA shall take final action to grant or deny an application after public notice and comment within 270 days of receipt, but does not automatically grant applications upon agency inaction.

favorable market conditions, until essentially all gasoline contained 10% ethanol by around 2013.

Figure II.A-1: Growth in the Use of Ethanol in Gasoline



In the 1980s, to make E10, or ''gasohol'' as it was known at the time, ethanol was ''splash blended'' into previously certified gasoline. ''Splash blending'' occurred when tanker trucks were filled up to 90 volume percent with gasoline at a gasoline terminal and then driven to an ethanol tank (at the gasoline terminal or at another location) to be filled with 10 volume percent ethanol. Mixing was assumed to take place as the truck drove to the retail station.[20] In 1987, when EPA first proposed the 1-psi RVP waiver for E10, just over 800 million gallons of ethanol was blended into gasoline. Assuming it was all blended at 10 percent, E10 represented just over 7 percent of the gasoline consumed in the U.S. This limited the impact of the 1-psi RVP waiver to a small portion of the fuel pool. Growth in ethanol use slowed between 1988 and 1990 as the volume of methyl tertiary butyl ether (MTBE) as a gasoline additive rose to provide octane and oxygen content to gasoline in lieu of ethanol.

In 1989, the first phase of the federal volatility standards went into effect.[21] Gasoline containing about 10% ethanol was simultaneously granted a 1-psi RVP waiver, such that continued use of E10 did not require the production and distribution of a special low-RVP gasoline blendstock for subsequent blending with ethanol. This allowed the practice of splash blending of ethanol to continue. At the time, gasohol also had a tax credit through which Congress intended to encourage the use of ethanol as a means of reducing dependence on foreign oil and making use of excess agricultural production.[22] Neither the Phase I (1989) nor the Phase II (1990 and thereafter) volatility standards appeared to have any direct impact on the magnitude of ethanol use. In 1991, we promulgated regulations in response to the CAA Amendments of 1990 that implemented the statutory 1-psi waiver. We again did not see significant impacts on ethanol use.

In 1992, the winter oxygenated fuels (''oxyfuels'') program for carbon monoxide (CO) nonattainment areas began as mandated by the CAA Amendments of 1990.[23] This program required the use of at least 2.7 percent by weight oxygen in gasoline, equivalent to about 15 volume percent MTBE or 7.8 volume percent ethanol in those areas.[24] The use of both ethanol and MTBE as gasoline additives grew over the next several years under the influence of the oxyfuels program, with ethanol reaching 1.3 billion gallons and E10 representing approximately 11 percent of all gasoline in 1994 (assuming all the ethanol was blended to make E10).

The reformulated gasoline (RFG) program, also enacted under the CAA Amendments of 1990, began in 1995 and applied to severe and extreme ozone nonattainment areas.[25] It required the use of at least 2.1 weight percent oxygen on average, equivalent to 11.6 volume percent MTBE or 6.0 volume percent ethanol.[26] Due to the summer volatile organic compounds (VOC) emissions standards for RFG, the 1-psi waiver for ethanol blends was effectively not applicable. This is because the gasoline-ethanol blends would not meet the summer VOC emission standards at the higher RVP. Thus ethanol blending into RFG required the production and distribution of a special low-RVP gasoline blendstock, referred to as reformulated blendstock for oxygenate blending (RBOB), into which ethanol could be blended at the terminal.[27] Perhaps due to this, and the relative ease of blending MTBE, ethanol's use in RFG was limited, and growth in the use of ethanol as a gasoline additive was more limited in the years after 1995 than it would have been if MTBE had not been available as an alternative to

[20] 52 FR 31292 (August 19, 1987).

[21] See 54 FR 11868 (March 22, 1989).

[22] Id.

[23] CAA sec. 211(m).

[24] Where allowed, ethanol was typically blended at 10 percent to take advantage of the 1-psi waiver, in both nonattainment and attainment areas.

[25] See, generally, CAA sec. 211(k).

[26] Again, ethanol was typically blended at 10 percent where allowed to take advantage of the 1-psi waiver.

[27] Because ethanol was high in octane, RBOB was also made to a lower octane specification in order to reduce costs.

ethanol. By the year 2000, ethanol use had grown to 1.7 billion gallons, with E10 representing about 13% of all gasoline (assuming all ethanol was blended to make E10). The practice of blending ethanol had also evolved from simple splash blending, to ethanol being metered into transport trucks at the 10% rate along with gasoline at the gasoline terminal; into RBOB in RFG areas; and into conventional gasoline (''CG'') in other areas.

Beginning in the early 2000s, concerns about leaking underground storage tanks and groundwater contamination led several states to ban the use of MTBE as a gasoline additive. The use of MTBE as a gasoline additive began falling in 2002, with its volume being replaced essentially 1:1 with ethanol in RFG areas. EPAct in 2005 removed the oxygenate mandate for RFG and replaced it with the Renewable Fuel Standard (RFS). By this time, refiners had already removed essentially all MTBE from RFG and replaced it with ethanol. This initially involved shifting much of the existing discretionary blending of ethanol in CG areas to RFG, until ethanol production and distribution capacity could increase to supply both the CG and RFG markets. By 2007, MTBE was rarely used, and coupled with the ongoing excise tax credit for ethanol, and the certainty of the Renewable Fuel Standard (RFS) mandate, ethanol's use rose significantly to 6.9 billion gallons by 2007, with E10 representing nearly half of all gasoline (assuming that all of the ethanol was blended to make E10).

In the following years, a combination of factors continued to create ongoing incentives for the rapid growth of E10, including rising crude oil prices, the expansion of the RFS program with the passage of EISA, and California's Low Carbon Fuel Standard (LCFS). With E10 comprising the majority of gasoline produced and distributed nationwide, refiners began producing not only low RVP/low octane RBOB for blending with ethanol in RFG areas at downstream terminals, but also a low octane conventional blendstock for oxygenate blending (CBOB) for blending CG with ethanol. By 2013, the pipeline distribution systems had switched over to transporting only CBOB for the production of conventional gasoline, forcing all refiners to harmonize around their production, and necessitating that 10 percent ethanol be added at downstream terminals in order for conventional gasoline to meet its octane and other specifications at retail. Essentially all gasoline, both reformulated and conventional, was E10 by this time, and total ethanol consumption was 13.2 billion gallons.

Similar to E10 in the 1970's, E15 has begun to slowly enter the marketplace. In October 2010, EPA partially approved a waiver request from Growth Energy allowing the introduction of E15 into commerce for use in model year 2007 and newer light-duty motor vehicles, subject to several conditions.[28] In January 2011, EPA extended this partial waiver to include model year 2001–2006 light-duty vehicles, allowing the use of E15 in model year 2001 and newer light-duty motor vehicles.[29] Since these partial waivers required E15 to meet a 9.0 psi RVP standard, in contrast to the 10.0 psi RVP standard E10 had to meet in the summer, introduction into commerce of E15 into CG areas required that CBOB for use to make E15 have a lower RVP than typically available.[30] This is similar to the situation faced by E10 in 1987. In the years since the E15 waivers were granted, the number of retail stations offering E15 has grown slowly, reaching 1,293 registered stations[31] (less than 1 percent of all retail stations) in May 2019.[32] Figure II.A–2 shows the growth of E15 stations since 2012.[33]

[28] 75 FR 68094 (November 4, 2010).

[29] 76 FR 4662 (January 26, 2011).

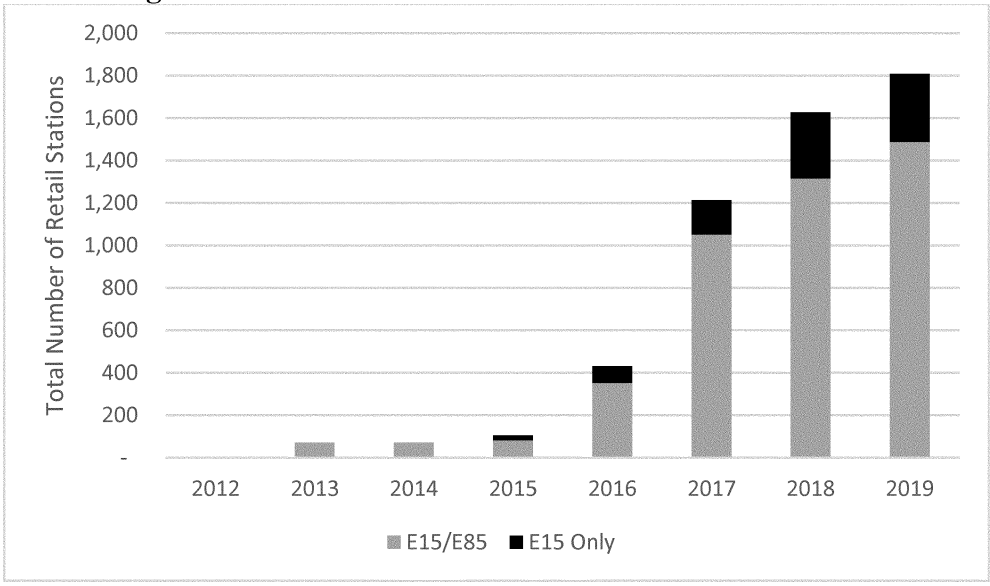
[30] Since RBOB was already sub-RVP, E15 could use the same RBOB already produced and distributed for E10 in RFG areas.

[31] The regulations at 40 CFR 80.1502 require that parties that produce E15 and ethanol for use in the production of E15 to participate in a survey of retail stations to ensure compliance with E15 misfueling mitigation requirements. As part of this process, these parties register with the RFG survey association, the independent surveyor that currently conducts the E15 survey. This registration with RFGSA includes information related to the number of E15 stations at which E15 is going to be sold. More information on RFGSA is available at: *http://rfgsa.org.* Growth Energy in comment also estimates this number at nearly 1,800 stations in 31 states. See Comments from Growth Energy, pg. 1. See also ''New Mexico Becomes 31st State to Add E15 Choice at the Pump,'' available at: *https://growthenergy.org/2019/05/01/growth-energy-new-mexico-becomes-31st-state-to-add-e15-choice-at-the-pump.*

[32] Much of this growth has been driven by USDA's Biofuel Infrastructure Program (BIP). In October 2015, USDA announced that the BIP was investing a total of $210 million, including money from USDA and matching commitments from states and private entities, to increase the number of retail stations offering E15 and other higher level gasoline-ethanol blends. These grants were intended to result in an additional 1,486 stations selling E15. In addition to BIP, Prime the Pump, a nonprofit organization supporting the expanded availability of E15, has provided funds to retail stations to add the necessary infrastructure to offer E15. This data demonstrates that a very high proportion of the stations currently offering E15 have received funding from federal, state, and/or industry sources. It also suggests that increasing the rate of growth of E15 stations in the future may require the availability of funds from such sources.

[33] See ''Data for Growth in E15 Retail Stations over Time from Growth Energy'' in the docket. EPA–HQ–OAR–2018–0775.

Figure II.A-2: Growth in E15 Retail Stations over Time



While there are no reliable statistics on the volume of E15 produced and distributed from these stations, it has remained small, with little overall impact on ethanol use. In coming years, if gasoline demand falls as projected by the U.S. Energy Information Administration (EIA),[34] growth in E15 would help offset a portion of the drop in ethanol use from declining E10 gasoline sales. The extension of the 1-psi RVP waiver to E15 in this action may help this, although there remain considerable other barriers as discussed in Section II.E, such that we do not project this action alone will meaningfully impact E15 sales in the coming years.

For reasons expanded upon in Section II.E (*e.g.,* consumer acceptance of E15 and demand for E10 in vehicles and engines not permitted to use E15), we believe marketers and retailers of gasoline will not be able to exclusively market E15 and will continue to offer E10 as the predominant fuel for the foreseeable future.

3. Background on CAA Sec. 211(h)

To properly understand this action, it is important to review the history of EPA's volatility controls both leading up to and after the enactment of CAA sec. 211(h). As mentioned above, Congress enacted CAA sec. 211(h) as part of the CAA Amendments of 1990 to address the volatility of gasoline. Congress did so in the context of EPA's prior regulatory actions, under CAA sec. 211(c), which aimed to control the RVP of gasoline. EPA has historically viewed Congress's enactment of 211(h), therefore, as a codification of EPA's regulatory actions regarding RVP up to that point.[35] Accordingly, CAA sec. 211(h)(1) prohibits the sale of gasoline with an RVP in excess of 9.0 psi [36] during the high ozone season while CAA sec. 211(h)(2) allows EPA to promulgate more stringent RVP requirements for nonattainment areas. CAA sec. 211(h)(4) provides a 1.0 psi RVP allowance for ''fuel blends containing gasoline and 10 percent'' ethanol and recognizes the existence of the 1979 CAA sec. 211(f)(4) waiver for E10—the only ethanol blend which had received such a waiver at that time—in the ''deemed to comply'' provisions contained in CAA sec. 211(h)(4)(A)–(C), which are discussed in more detail below.

a. Pre-Enactment Volatility Regulations

In 1987, prior to the CAA Amendments of 1990, EPA for the first time proposed limitations on the volatility of gasoline under CAA sec. 211(c), which provides EPA with general authority to regulate fuels and fuel additives. These limitations on gasoline volatility were proposed to address evaporative emissions from gasoline-fueled vehicles due to their contribution to ozone formation. The volatility of gasoline had begun rising significantly above the 9.0 psi RVP vehicle certification fuel level in the years preceding EPA's action, due to a strong economic incentive to add butane [37] to fuel due to favorable blending economics.[38] This led to very high evaporative VOC emissions from the in-use fleet of gasoline vehicles. EPA believed that matching the volatility of in-use gasoline to that of certification fuel would reduce evaporative emissions and would help ensure that the vehicles continued to have the same evaporative emissions levels in-use to the levels on which the vehicles were certified. In particular, limiting the volatility of gasoline to 9.0 psi RVP in the summer, which is the level in the indolene, a gasoline containing no ethanol, on which vehicles were certified under CAA sec. 206 at that time, would reduce emissions from all gasoline-related sources, enabling additional VOC emission reductions.[39]

At the time of the 1987 proposal, parties were primarily making E10 through ''splash blending,'' as described above. Adding 10 percent ethanol to gasoline, however, causes roughly a 1.0 psi RVP increase in the blend's volatility.[40] At the time, due to the limited amount of ethanol blended into gasoline, almost no low-RVP gasoline was available into which 10 percent ethanol could be splash-blended without the blended fuel exceeding the proposed RVP limit. Thus, even though the CAA sec. 211(f)(4) waiver allowed E10 to be lawfully introduced into

[34] See ''Updated market impacts of biofuels in 2019,'' Docket Item No. EPA–HQ–OAR–2018–0167–1330.

[35] See 76 FR 44433 (July 25, 2011).

[36] 9.0 psi RVP was and continues to be the level of RVP for gasoline certification fuel used to certify motor vehicles.

[37] Butane, in this context, refers to a high-volatility, relatively inexpensive gasoline blendstock that gasoline refiners typically add to or remove from gasoline to control RVP.

[38] 52 FR 31279 (August 19, 1987).

[39] See 52 FR 31274 at 31278–31287 (August 19, 1987).

[40] Id.

commerce, the lowered RVP standards had the potential to shut down the nascent ethanol blending industry.

To address this potential hurdle to continued ethanol blending, in the 1987 proposal, EPA included interim regulations for gasohol that allowed it to be 1.0 psi RVP higher than otherwise required for gasoline.[41] In describing our regulatory action to provide this flexibility, we refer to it as the 1-psi RVP allowance.[42] As a result, downstream blenders could add 10 percent ethanol into the gasoline that refineries had already produced without violating the proposed RVP regulations. The Agency, therefore, designed the 1-psi RVP allowance as a means to ensure that the effect of the CAA sec. 211(f)(4) waiver that was then applicable to E10 would not be nullified, as well as to address other public policy concerns, such as reducing dependence on foreign oil and making use of excess agricultural production, as referenced above. The Agency proposed that the 1-psi RVP allowance be conditioned on sampling and testing the final blend of gasoline and ethanol for RVP by all regulated parties, including downstream blenders, that elected to use the waiver.[43]

In 1989, EPA finalized regulations that imposed limits on the volatility of gasoline and ethanol blends as ''Phase I'' of a two-phase regulation under CAA sec. 211(c). EPA's regulation established a maximum RVP standard of 10.5 psi for gasoline during the high ozone season.[44] In that action, EPA also provided an RVP allowance ''for gasoline-ethanol blends commonly known as gasohol'' that was 1.0 psi higher than for gasoline.[45] This was finalized as an interim measure with the intent to revisit the issue in ''Phase II'' of the volatility regulations.[46]

EPA's final regulations in ''Phase I'' provided that in order to receive the 1-psi RVP allowance, ''gasoline must contain at least 9% ethanol (by volume),'' and that ''the ethanol content of gasoline shall be determined by use of one of the testing methodologies specified in Appendix F to this part.'' The regulations also provided that ''the maximum ethanol content of gasoline shall not exceed any applicable waiver conditions under section 211(f)(4) of the Clean Air Act.'' [47]

In ''Phase I,'' EPA did not place limits on the upper bound of the ethanol content, other than by providing, as quoted above, that the ethanol content shall not exceed any applicable waiver conditions under CAA sec. 211(f)(4) (and thereby implicitly incorporating any upper-bound limit imposed as a condition on any future applicable waiver). At the time, the highest permissible ethanol content under a CAA sec. 211(f)(4) waiver was 10 percent ethanol, and thus, this provision could only apply to blends containing 9–10 percent ethanol. In other words, EPA designed the 1-psi RVP allowance to allow for the continued lawful introduction into commerce of E10 and the Phase I RVP regulatory language would have automatically accommodated future increases in allowable ethanol concentration in gasoline under a CAA sec. 211(f)(4) waiver.

In June 1990, in ''Phase II'' of the volatility regulations, EPA established a maximum RVP standard of 9.0 psi for gasoline during the high ozone season. The regulations also established an RVP standard of 7.8 psi for gasoline during the high ozone season in both ozone attainment and nonattainment areas in the southern states of the country. EPA further maintained the 1-psi RVP allowance for blends of 10 percent ethanol and gasoline and did not modify the regulations at 40 CFR 80.27(d).[48] Thus, both the language stating that the gasoline must contain at least 9 percent ethanol, and the language stating that the maximum ethanol content of gasoline shall not exceed any applicable waiver conditions under CAA sec. 211(f)(4), remained in the regulations, effectively allowing for automatic accommodation of the 1-psi RVP allowance for increases in allowable ethanol concentration in gasoline under future CAA sec. 211(f)(4) waivers.[49] In doing so, the Agency reiterated that these regulatory provisions are intended to accommodate the importance of ethanol to the nation's energy security as well as the agricultural economy sector. The Agency also addressed air quality impacts of allowing the 1-psi RVP allowance given that a higher RVP limit for blends of 10 percent ethanol and gasoline would result in increased evaporative VOC emissions in the small part of the gasoline market attributable at that time to blended. EPA explained that the 1 psi RVP allowance ''reflects the moderation in EPA's concern about negative air quality impact as well as a reluctance to threaten the motor fuel ethanol production and blending industries with collapse.'' [50]

b. Enactment of CAA Sec. 211(h)

In November 1990, Congress enacted the CAA Amendments of 1990, including CAA sec. 211(h), the first statutory provision specifically addressing the volatility of gasoline. CAA sec. 211(h)(1) required EPA ''to promulgate regulations making it unlawful . . . during the high ozone season to sell . . . or introduce into commerce gasoline with a Reid Vapor Pressure in excess of 9.0 pounds per square inch.'' Further in CAA sec. 211(h)(4), Congress, following EPA's lead in the 1989 and 1990 volatility regulations, also allowed fuel blends containing gasoline and 10 percent ethanol to have 1 psi higher RVP than the RVP standard otherwise established in CAA sec. 211(h)(1). This statutory provision is referred to as the 1-psi RVP waiver.[51] CAA sec. 211(h)(4) provides the following ethanol waiver: ''for fuel blends containing gasoline and 10 percent denatured anhydrous ethanol, the Reid vapor pressure limitation under this subsection shall be one pound per square inch (psi) greater than the applicable Reid vapor pressure limitations established under [CAA sec. 211(h)(1)].''

According to legislative history, ''[t]his provision was included in recognition that gasoline and ethanol are mixed after the refining process has been completed. It was recognized that to require ethanol to meet a nine pound RVP would require the creation of a production and distribution network for sub-nine pound RVP gasoline. The cost of producing and distributing this type of fuel would be prohibitive to the petroleum industry and would likely result in the termination of the availability of ethanol in the marketplace.'' [52] EPA has interpreted CAA sec. 211(h) as largely a codification of our prior RVP regulations and the 1-psi RVP allowance.[53]

Further, Congress enacted a conditional defense against liability for violations of the RVP level allowed

[41] See 52 FR 31274, 31316 (August 19, 1987).

[42] See 52 FR 31316 (August 19, 1987).

[43] See 52 FR 31274, proposed 40 CFR 80.27(d)(1) (August 19, 1987). See also 54 FR 11872–73 (March 22, 1989), where we declined to finalize this approach.

[44] See 54 FR 11879 (March 22, 1989).

[45] Id.

[46] Id.

[47] 54 FR 11872–73 (March 22, 1989) (codified at 40 CFR 80.27(d)).

[48] See 55 FR 23658, 23660 (June 11, 1990).

[49] Id.

[50] ''While some believe the industry should not exist . . . [o]ther agencies and Congress will continue to address related agricultural, trade and energy issues which have led to federal support for the existence of the gasohol industry.'' 55 FR 23666 (June 11, 1990).

[51] We also refer to the regulations at 40 CFR 80.27 as the ''1-psi RVP waiver'' as well.

[52] S. Rep. No. 101–228, at 110 (1989) (Conf. Rep.); reprinted at 5 Leg. Hist. at 8450 (1993).

[53] See 76 FR 44433 (July 25, 2011).

under the 1-psi waiver by providing that full compliance ''shall be deemed'' with a demonstration that (A) ''the gasoline portion of the blend complies with the Reid vapor pressure limitations promulgated pursuant to this subsection;'' (B) ''the ethanol portion of the blend does not exceed its waiver condition under subsection (f)(4) of this section;'' and (C) ''no additional alcohol or other additive has been added to increase the Reid Vapor Pressure of the ethanol portion of this blend.'' (CAA sec. 211(h)(4)). This is referred to as the ''deemed to comply'' provision, or the alternative compliance mechanism for the 1-psi waiver. It is considered a statutorily mandated defense that allows regulated parties, such as downstream oxygenate blenders,[54] to demonstrate compliance with the RVP standard while taking advantage of the 1-psi waiver by meeting the specified conditions in CAA sec. 211(h)(4) in lieu of complying with the testing provisions in 40 CFR 80.27(d)(2) (1987). It also reflects Congressional response to EPA's proposed compliance testing provisions for the 1-psi RVP allowance in the 1987 proposed rulemaking, which Congress viewed as complicated and burdensome given the industry practices at the time used to produce gasohol: ''the enforcement strategy recently proposed by the Agency . . . would be totally unworkable for those motor vehicle fuels which are a blend of gasoline and ethanol and which are allowed a higher RVP limit under the reported bill.'' [55]

c. Implementation of CAA Sec. 211(h)(4)

Subsequent to Congress's enactment of CAA sec. 211(h)(4), EPA modified our volatility regulations to more explicitly align with the new statutory provisions, but ''did not propos[e] any change to the current requirement that the blend contain between 9 and 10 percent ethanol (by volume) to obtain the one psi allowance.'' [56] However, EPA did modify its regulations at 40 CFR 80.27 to clarify that ''gasoline must contain denatured, anhydrous ethanol,'' and that ''[t]he concentration of the ethanol, excluding the required denaturing agent, must be at least 9% and no more than 10% (by volume) of the gasoline'' (where, as quoted above, the previous version of the regulations provided that gasoline ''must contain at least 9% ethanol'' to qualify for the 1-psi RVP allowance and thus did not set an upper limit on ethanol content). At that time, we read both the statutory 1-psi waiver provision and the ''deemed to comply'' provision in CAA sec. 211(h)(4) together to limit the volume concentration of ethanol subject to the CAA sec. 211(h)(4) waiver to between 9 and 10 percent, as only blends of gasoline and up to 10 percent ethanol had a waiver under CAA sec. 211(f)(4) at the time EPA promulgated the RVP requirements.[57] We further stated that ''this is consistent with Congressional intent [because] the nature of the blending process . . . further complicates a requirement that the ethanol portion of the blend be exactly 10 percent ethanol.'' [58] For these reasons, the 1-psi waiver reflected Congressional recognition of the existing CAA sec. 211(f)(4) waiver for E10; Congress intended that the 1-psi waiver from the 9.0 psi RVP requirement in CAA sec. 211(h)(1) would allow for E10's continued lawful introduction into commerce.[59]

In issuing implementing regulations at 40 CFR 80.28(g)(8) related to the ''deemed to comply'' provision in CAA sec. 211(h)(4), EPA allowed parties to demonstrate a defense against liability by making the showings provided in CAA sec. 211(h)(4), stating that ''EPA believes this defense is limited to ethanol blends which meet the minimum 9 percent requirement in the regulations and the maximum 10 percent requirement in the waivers under section 211(f)(4).'' [60]

4. Background of E10 and E15 CAA Sec. 211(f)(4) Waivers

CAA sec. 211(f)(1) makes it unlawful for ''any manufacturer of any fuel or fuel additive'' to first introduce into commerce, or to increase the concentration in use of, any fuel or fuel additive for use by any person in motor vehicles manufactured after MY1974, which is not substantially similar (commonly referred to as ''sub sim'') to any fuel or fuel additive used in the certification of any MY1975, or subsequent model year, vehicle or engine under CAA sec. 206. Fuels or fuel additives that are not sub sim to a fuel or fuel additive used in certification cannot be introduced into commerce unless EPA has granted a waiver under CAA sec. 211(f)(4). CAA sec. 211(f)(4) provides that upon application of any fuel or fuel additive manufacturer, the Administrator may waive the prohibitions of CAA sec. 211(f)(1) if the Administrator determines that the applicant has established that such fuel or fuel additive, or a specified concentration thereof, will not cause or contribute to a failure of any emission control device or system (over the useful life of the motor vehicle, motor vehicle engine, nonroad engine, or nonroad vehicle in which such device or system is used) to achieve compliance by the vehicle or engine with the emission standards to which it has been certified pursuant to CAA sec. 206 and 213(a).

In 1978, a waiver application was submitted for gasoline containing ethanol at 10 percent by volume. EPA did not act to grant or deny the application for a waiver for E10, and consequently, under the statutory scheme as it existed at that time, the waiver was deemed granted by operation of law.[61] Thus, E10 was granted a waiver under CAA sec. 211(f)(4) without any conditions, in contrast to other CAA sec. 211(f)(4) waivers, which included, for example, conditions on fuel characteristics such as RVP.[62]

For E15, EPA granted partial waivers under CAA sec. 211(f)(4) in 2010 and 2011.[63] In March 2009, Growth Energy and 54 ethanol manufacturers submitted an application to EPA to grant a waiver under CAA sec. 211(f)(4) to allow E15 for use in all vehicles, engines, and equipment (''the E15 waiver request''). On October 13, 2010, EPA partially approved the E15 waiver request to allow the introduction of E15 into commerce for use in MY2007 and newer light-duty motor vehicles subject to certain waiver conditions.[64] Subsequently, on January 21, 2011, EPA extended this partial waiver to include MY2001–2006 light-duty motor vehicles after receiving and analyzing additional U.S. Department of Energy (''DOE'') test data and finding that E15 will not cause or contribute to a failure to achieve compliance with the emissions standards to which these vehicles were certified over their useful lives.[65] EPA also denied the waiver request for MY2000 and older light-duty motor

[54] ''Oxygenate blenders'' are defined in our regulations as ''any person who owns, leases, operates, controls, or supervises an oxygenate blending facility, or who owns or controls the blendstock or gasoline used or the gasoline produced at an oxygenate blending facility.'' An oxygenate blending facility is defined as ''any facility (including a truck) at which oxygenate is added to gasoline or blendstock, and at which the quality or quantity of gasoline is not altered in any other manner except for the addition of deposit control additives.'' See 40 CFR 80.2(mm) and (ll).

[55] S. Rep. No. 100–231, 100th Cong. 1st Sess. at 149 (1987).

[56] See 56 FR 64708 (December 12, 1991).

[57] Id.

[58] Id.

[59] Id.

[60] Id. and 40 CFR 80.28(g).

[61] See 44 FR 20777 (April 6, 1979).

[62] See, *e.g.,* ''Fuels and Fuel Additives; Waiver Application,'' Octamix Waiver, 53 FR 3636 (February 8, 1988).

[63] See 75 FR 68094 (November 4, 2010) and 76 FR 4662 (January 26, 2011), respectively.

[64] See 75 FR 68094 (November 4, 2010).

[65] See 76 FR 4662 (January 26, 2011).

vehicles, as well as all model year heavy-duty gasoline engines and vehicles, highway and off-highway motorcycles, and nonroad engines, vehicles, and equipment. This denial was based on EPA's engineering analysis that E15 could adversely affect the emissions and emissions controls of vehicles, engines, and equipment not covered by the partial waivers and that the applicants had not provided sufficient data or other information to demonstrate that E15 would not cause or contribute to a failure to achieve compliance with the emissions standards to which these vehicles, engines, and equipment were certified over their full useful lives, as required by CAA sec. 211(f)(4).

In the October 2010 waiver, for MY2007 and newer motor vehicles, EPA also concluded that the data and information show that E15 will not lead to violations of evaporative emissions standards, so long as the fuel does not exceed an RVP of 9.0 psi in the summer.[66] EPA imposed a condition that allows fuel manufacturers to introduce E15 into commerce so long as the E15 does not have an RVP ''in excess of 9.0 psi during the time period from May 1 to September 15.'' [67] Subsequently, in the January 2011 waiver, EPA imposed identical waiver conditions for MY2001–2006 motor vehicles, including the requirement that the fuel not exceed an RVP of 9.0 psi in the summer, based on the same conclusion.[68]

Taken together, these partial waivers allow E15 to be used in MY2001 and newer light-duty motor vehicles subject to particular waiver conditions, including fuel quality conditions and conditions on the sale and use of E15. These waiver conditions include the prohibition on the use of E15 in pre-MY2001 motor vehicles, in addition to all model year heavy-duty gasoline engines or vehicles, or motorcycles, as well as any nonroad engines or nonroad vehicles. The waiver conditions also place limitations on the ethanol that can be added (both the concentration and quality),[69] as well as a condition that the RVP of the final fuel not exceed 9.0 psi.[70] The waiver conditions also require fuel and fuel additive manufacturers to submit to EPA a misfueling mitigation plan describing all reasonable precautions for ensuring E15 is only used in MY2001 and newer motor vehicles, as described in the waiver conditions.[71] To help facilitate the implementation of the waiver conditions and place requirements on parties other than fuel and fuel additive manufacturers, EPA promulgated the Misfueling Mitigation Rule in 2011, under CAA sec. 211(c), subsequent to the E15 partial waiver decisions.[72] The MMR imposed fuel dispenser labeling, PTD, and compliance survey requirements on parties that make and distribute E15. EPA promulgated the MMR ''to mitigate misfueling with E15 that lawfully has been introduced into commerce under the terms of the waiver[s]. The waiver conditions, and implementation of the waiver conditions, address a closely related but different issue—when, how and by whom E15 can be introduced into commerce under the partial waiver decisions. This rule only addresses the issue of mitigating misfueling in the event E15 is lawfully introduced into commerce under the partial waivers, and is issued under EPA's authority under section 211(c).'' [73] The MMR also applied EPA's prior interpretation of the 1-psi waiver in CAA sec. 211(h)(4) as not applying to E15 and adopted certain regulations designed to effectuate that interpretation.[74] In this action, EPA is interpreting CAA sec. 211(h)(4) and also amending the regulations to implement that interpretation.

B. Interpretation of CAA Sec. 211(h)(4)

In this action, we are finalizing our proposed change in interpretation of CAA sec. 211(h)(4). We find that the statutory language at CAA sec. 211(h)(4) is ambiguous. We last interpreted this section in 2011, and in this action we are changing our interpretation. Our new interpretation is consistent with the text of the provision, its context within CAA sec. 211(h), and Congressional intent. It is also reasonable in light of the changed circumstances since we last interpreted this provision in 2011, and in light of EPA's determination that it is appropriate to provide E15 the 1-psi waiver.

As discussed in Section II.A.2, gasoline-ethanol blends in the marketplace have increased such that the in-use gasoline supply is now almost entirely E10. E15 is now present in the marketplace, but the current limitation of the applicability of the 1-psi waiver to only E10 in most CG areas is one of several hurdles to the continued entry of E15 into the marketplace (discussed in more detail in Section II.E).[75] The same market limitation that prompted EPA to provide the 1-psi waiver for E10 nationwide in 1989 currently exists for E15 in most CG areas. Namely, in order for E15 to be distributed in most CG areas, it requires the production and distribution of a higher cost low-RVP CBOB into which 15 percent ethanol could be blended while still meeting the 9.0 psi RVP standard for gasoline during the high ozone season.[76] This is because E10 currently receives the benefit of the 1-psi waiver, but E15 does not. As a result, some parties for which other constraints (*e.g.,* compatible service station equipment) are not of concern might still not be able to produce and distribute E15, given the difficulty and cost associated with obtaining CBOB that when blended to produce E15 would meet the 9.0 psi RVP during the summer. With the 1-psi waiver, 15 percent ethanol could be blended using the same CBOBs currently being distributed for use with 10 percent ethanol, year-round.[77] This action, therefore, is a response to changed circumstances since the Agency's promulgation of RVP regulations in 1990, which pre-dates EPAct in 2005 and EISA in 2007, and since we last interpreted CAA sec. 211(h)(4) in 2011. Further, because blending 15 volume percent ethanol into gasoline would result in an approximate 1.0 psi RVP increase, similar to E10, the resultant RVP for any blended fuel would be no higher than the RVP standard plus the 1-psi waiver, which is currently 10.0 psi for a gasoline-ethanol blended fuel

[66] See 75 FR 68149–68150 (November 4, 2010).

[67] See 75 FR 68149 (November 4, 2010).

[68] See 76 FR 4682–4683 (January 26, 2011).

[69] For example, the ethanol used to make E15 must meet ASTM D4806–10 specifications for ethanol quality. See ASTM D4806–10, ''Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel,'' ASTM International, West Conshohocken, PA, 2010.

[70] See 75 FR 68094 (November 4, 2010) and 76 FR 4662 (January 26, 2011). This RVP limit is identical to the limitation under CAA sec. 211(h)(1) of 9.0 psi RVP during the high ozone season. The high ozone season was defined by the Administrator via regulation to mean the period from June 1 to September 15 of any calendar year.

[71] See 76 FR 4662, 4582 (January 26, 2011).

[72] See 76 FR 44406 (July 25, 2011).

[73] See 76 FR 44406, 44440 (July 25, 2011).

[74] As discussed further in Section II.B, in promulgating regulations following the enactment of CAA sec. 211(h)(4), EPA interpreted 211(h)(4) to apply to gasoline-ethanol blends containing between 9 and 10 percent ethanol. See 56 FR 64708 (December 12, 1991).

[75] See, *e.g.,* Prime the Pump: Driving Ethanol Gallons, available at: *https://growthenergy.org/wp-content/uploads/2019/01/MDEV-19022-PTP-Overview-2019–01-25.pdf.*

[76] Some parties have access to low RVP blendstocks created for low-RVP areas and RFG areas. However, these blendstocks are not widely distributed in all areas. For a list of state low-RVP areas, see EPA's ''State Fuels'' website available at: *https://www.epa.gov/gasoline-standards/state-fuels.*

[77] In reformulated gasoline areas (approximately one-third of gasoline nationwide) and certain other areas that do not provide a 1-psi waiver for E10, E15 can already be blended using the same blendstocks used for E10.

containing 10 percent ethanol.[78] This interpretation is consistent with the plain language of CAA sec. 211(h) and with Congress' intent to promote ethanol blending into gasoline, and is not expected to cause significant increases in emissions as compared to the current market situation with E10 as discussed in Section II.F.

In the MMR, we interpreted CAA sec. 211(h)(4) (which affords a 1-psi waiver to ''fuel blends containing gasoline and 10 percent denatured anhydrous ethanol'') as providing a 1-psi waiver for fuel blends of gasoline and at least 9 volume percent ethanol and not more than 10 volume percent ethanol despite having given E15 a partial CAA sec. 211(f)(4) waiver from sub sim. As previously explained, this interpretation was premised on a reading of regulations and statutory provisions that reflected the existence of a CAA sec. 211(f)(4) waiver for E10, which was the highest available ethanol content in the gasoline marketplace at the time of the 1990 Amendments to the CAA, and we did not alter this interpretation based on the existence of the E15 CAA sec. 211(f)(4) partial waivers. In that action, we read CAA secs. 211(h)(4), including the ''deemed to comply'' provision, and 211(h)(5) together to only apply the 1-psi waiver for E10. In this action, we are adopting a new interpretation of CAA sec. 211(h)(4), under which the provision specifies the minimum ethanol content that fuel blends containing ethanol and gasoline must contain in order to qualify for the 1-psi waiver. We are finalizing a new interpretation of this statutory provision that would allow the 1-psi waiver for gasoline containing at least 10 percent ethanol. This reading, which harmonizes all relevant provisions, removes the current, anomalous result whereby a sole ethanol blend (E10) receives the 1-psi waiver, when market conditions have changed over time such that E15 is an increased presence in the marketplace. Specifically, it would mean that the 1-psi waiver is equally applicable to gasoline-ethanol blends the agency finds are sub sim under CAA sec. 211(f)(1) and those gasoline-ethanol blends that receive or have received a CAA sec. 211(f)(4) waiver. At present, these are blends up to 15 percent ethanol, based on: (1) EPA's prior issuance of partial waivers in 2010 and 2011 under CAA sec. 211(f)(4) for E15; and (2) the finding in this rulemaking that E15 is sub sim to Tier 3 E10 certification fuel.[79]

Moreover, it is well settled that EPA has inherent authority to reconsider, revise, or repeal past decisions to the extent permitted by law so long as we provide a reasoned explanation. Many commenters pointed to EPA's previous interpretation of CAA sec. 211(h)(4) in the volatility regulations promulgated after the CAA Amendments of 1990, and the MMR as reasons why EPA's new interpretation is flawed. We do not find these arguments persuasive because of EPA's inherent authority to reconsider, revise, or repeal past decisions to the extent permitted by law. This authority exists in part because EPA's interpretations of the statutes we administer ''are not carved in stone.'' [80] An agency ''must consider varying interpretations and the wisdom of its policy on a continuing basis.'' [81] This is true when, as is the case here, review is undertaken ''in response to changed factual circumstances or a change in administration.'' [82] EPA must also be cognizant where we are changing a prior position that the revised position is permissible under the statute and must articulate a reasoned basis for the change.[83] In this case, EPA's interpretation of the text of CAA sec. 211(h)(4) is a reasonable one, and takes into account changed circumstances that have arisen since we issued the partial waivers for E15 in 2010 and 2011.

The Clean Air Act does not define the term ''containing'' in the phrase ''containing gasoline and 10 percent denatured anhydrous ethanol,'' and at proposal, therefore, EPA relied on the dictionary meaning that is reasonable, sensible and provides meaning to the reading of CAA sec. 211(h)(4). As explained in more detail below and in the response to comments (RTC) document accompanying this action, we are interpreting this term to establish a lower limit on the minimum ethanol content required for the 1-psi waiver in CAA sec. 211(h)(4). This interpretation applies to 211(h)(4) in its entirety, and 211(h)(5). Most of the commenters that argued for limiting the 1-psi waiver only selected their preferred meaning of ''containing'' without addressing whether that definition fit within the statutory scheme of CAA sec. 211(h)(4) or makes sense in this context and we have addressed these comments in Section 1.2.2.1 of the RTC document. Even when other potential meanings of the term are considered, EPA's interpretation and definition are eminently reasonable, make the most sense and provide meaning to the reading of CAA sec. 211(h)(4) in light of the current circumstances with respect to E15.[84]

As explained at proposal, Congress enacted CAA sec. 211(h)(4) when 10 percent ethanol was the highest permissible ethanol content in gasoline under the 1978 CAA sec. 211(f)(4) waiver that allowed for its introduction into commerce. At that time, there were no other CAA sec. 211(f)(4) waivers for gasoline-ethanol blends. As also explained at proposal, Congress promulgated the ''deemed to comply'' provision as an enforcement mechanism for the 1-psi waiver. Of relevance is the criterion that ''the ethanol portion of the blend does not exceed its waiver condition under subsection (f)(4).'' [85] In 2011, when EPA declined to extend the 1-psi waiver to E15, the agency's interpretation was premised largely on this additional criterion for the 1-psi waiver.[86] Nothing in these prior agency interpretations, however, sheds light on how to read ''containing,'' at the current time.

At proposal, we also explained that lack of modifiers in the phrase ''fuel blends containing gasoline and ten percent ethanol,'' supports our reading that Congress established a lower limit on the minimum ethanol content for the 1-psi waiver rather than an upper limit on the ethanol content. We then explained that Congress could legislate and would have likely employed terms connoting a maximum ethanol content limit in CAA sec. 211(h)(4) similar to, for example, CAA secs. 211(k) and (m) had Congress intended for the ethanol content to be an upper bound. CAA secs. 211(k) and (m) are mandatory gasoline content provisions that also employ specific units of measurement as an indication of measurement precision. CAA sec. 211(m)(2) provides that ''gasoline is to be blended to contain not less than 2.7 percent oxygen by weight.'' Section 211(k)(3)(A)(1)

[78] This is true for E15 made from blends of certified gasoline or BOB and ethanol. This volatility relationship is not maintained when other products (*e.g.,* natural gas liquids) are blended to make E15.

[79] See discussion at Section II.D.1, infra, for further discussion of the regulatory changes associated with this changed interpretation.

[80] *Chevron U.S.A. Inc.* v. *NRDC, Inc.,* 467 U.S. 837, 863 (1984).

[81] Id. at 863–64.

[82] *Nat'l Cable & Telecomms. Ass'n* v. *Brand X internet Servs.,* 545 U.S. 967, 981 (2005). See also *Nat'l Ass'n of Home Builders* v. *EPA,* 682 F.3d 1032, 1043 (DC Cir., 2012) (change in administration is a ''perfectly reasonable basis'' for an agency's reappraisal of its regulations and programs).

[83] *FCC* v. *Fox Television Stations, Inc.,* 556 U.S. 502, 515.

[84] See *General Dynamics Land Systems* v. *Cline,* 540 U.S. 581, 596 (2004) (finding that ''age'' has several commonly understood meanings which should be interpreted in the context used).

[85] CAA sec. 211(h)(4)(B).

[86] See 76 FR 44406, 44433–35 (July 25, 2011).

provides that ''[t]he benzene content of reformulated gasoline shall not exceed 1.0 per cent by volume;'' section 211(k)(3)(A)(ii) provides that ''[t]he aromatics hydrocarbon content of the reformulated gasoline shall not exceed 25 percent by volume.'' We further noted that CAA sec. 211(h)(1) employs the modifier ''in excess'' as compared to CAA sec. 211(h)(4). But Congress notably did not use any modifier in CAA sec. 211(h)(4), which sets out a relaxation of a mandatory provision. It, therefore, appears that Congress made a deliberate choice—where Congress sought to impose mandatory fuel content requirements, such as in CAA secs. 211(k) and (m), it utilized modifiers as compared to where it set out an allowance or relaxation of a mandatory requirement such as CAA sec. 211(h)(4) for RVP, where it did not utilize modifiers. In other words, where Congress intended to impose a ''no greater than'' requirement addressing fuel properties, it explicitly did so. In contrast, in CAA sec. 211(h)(4), Congress included no such language.

Additionally, Congress employed modifiers where fuel content or properties were of a nature subject to precise determination, but as also shown elsewhere in this preamble, Congress promulgated the deemed to comply provision in response to measurement imprecision resulting from splash blending ethanol into gasoline. These provisions thus reflect a deliberate and intentional scheme and confirm our view that Congress legislates and the omission of modifiers in CAA sec. 211(h)(4) was also deliberate and intentional.

Given that this provision lacks modifiers for the term ''containing,'' in contrast to the other statutory provisions referenced above, there is support for our reading that this term as employed in the phrase ''fuel blends containing gasoline and ten percent ethanol'' is ambiguous and provides room for EPA to make interpretive and policy choices.

It is therefore permissible, and supported by the text of the statute, where Congress has used only the ambiguous term ''containing'' in CAA sec. 211(h)(4), for EPA to interpret ''containing'' to mean ''containing at least.'' Given this ambiguity, EPA's construct only needs to be a reasonable one and neither the best nor only reading of ''containing.'' (''Even if the statute does not compel EPA's reading, and indeed even if EPA's reading is not the better reading, the statute at a minimum is sufficiently ambiguous on this point to permit EPA's reading.'') [87] Where, as in this instance, EPA is confronted with a reading of a provision that was enacted at the time the highest permissible ethanol content under EPA's then-current regulations was E10, this connotation of ''containing'' as specifying a minimum limit or floor on the ethanol content for fuel blends to qualify for the 1-psi waiver in CAA sec. 211(h)(4) is a permissible reading that gives meaning to the phrase ''fuel blends containing gasoline and 10 percent denatured anhydrous ethanol.'' It is neither strained nor contrived but rather allows EPA as the agency tasked with administering the Clean Air Act to give effect and meaning to the terms of a relevant provision. (''The power of an administrative agency to administer a congressionally created . . . program necessarily requires the formulation of policy and the making of rules to fill any gap left, implicitly or explicitly, by Congress.'') [88]

We are interpreting this language as establishing a lower limit, or floor, on the minimum ethanol content for a 1-psi waiver from the volatility requirements expressed in CAA sec. 211(h)(1), rather than an upper limit on the ethanol content. As explained at proposal, we can look to the use of the term ''containing'' in its ordinary sense, given the purpose and context of CAA sec. 211(h)(4) described above. ''Containing'' is defined as ''to have within: hold.'' [89] Under this interpretation, the statute sets the minimum ethanol content, such that all fuels which contain at least 10 percent ethanol may receive the 1-psi waiver, including blends that contain more than 10 percent ethanol.[90] Therefore, E15, which has within it 10 percent denatured anhydrous ethanol, meets this definition, and should receive the 1-psi waiver specified in CAA sec. 211(h)(4).[91]

When EPA issued implementing regulations under both CAA sec. 211(c) prior to the enactment of CAA sec. 211(h), and under CAA sec. 211(h), once that provision was enacted, those regulations reflected the highest permissible ethanol content at the time they were issued, which was 10 percent ethanol under a CAA sec. 211(f)(4) waiver. In describing the volatility regulations promulgated under CAA sec. 211(c), we stated that the 1-psi waiver is ''for blends of gasoline with about 10 percent ethanol, or gasohol.'' [92] In regulations, we codified the CAA sec. 211(f)(4) waiver, providing that ''[t]he maximum ethanol content . . . in gasoline shall not exceed any applicable waiver conditions under CAA sec. 211(f)(4) waiver.'' [93] Thus, EPA's actions merely reflected the situation at the time the regulations were promulgated. Additionally, prior EPA statements on the imprecise nature of gasoline-ethanol blending also support the view that neither Congress nor EPA intended to limit ethanol content for the 1-psi waiver. ''The nature of the blending process . . . complicates a requirement that the ethanol portion of the blend be exactly 10 percent ethanol.'' [94]

The phrase ''fuel blends containing gasoline and ten percent ethanol'' is ambiguous, but as previously discussed, EPA as the agency tasked with implementing CAA sec. 211(h)(4) is interpreting this provision in a reasonable manner, which is consistent with the reading articulated in the House bill, *i.e.,* gasoline that contains at least 10 percent ethanol receives the 1-psi waiver.[95] EPA is not aware of any conference or committee reports, or

[87] *NRDC* v. *EPA,* 749 F.3d 1055 (D.C. Cir. 2014)

[88] *Chevron U.S.A. Inc.* v. *NRDC, Inc.,* 467 U.S. 837, 843 (1984).

[89] Webster's Third New International Dictionary 491 (unabridged ed. 1981). See also American Heritage Dictionary online 2019, defining ''containing'' as ''to have within; hold.''

[90] We are not changing our interpretation of the term 10 volume percent, which includes as little as 9 volume percent, to continue to provide the necessary blending flexibility for E10. Comments requesting that EPA revise its interpretation to exclude ethanol blends containing between 9 and 10 volume percent ethanol are outside the scope of this action, since EPA proposed only to interpret CAA sec. 211(h)(4) to apply to blends higher than 10 volume percent ethanol, and did not propose to revise its interpretation that blends containing 9 volume percent ethanol also receive the 1-psi waiver. Moreover, the text of CAA sec. 211(h)(4) encompasses E10, and, as explained in regulations implementing CAA sec. 211(h)(4), we stated that requiring exactly 10 volume percent ethanol ''would place a next to impossible burden on ethanol blenders,'' and that ''[t]he nature of the blending process itself . . . further complicates a requirement that the ethanol portion of the blend be exactly 10 percent ethanol.'' See 56 FR 24245 (May 29, 1991).

[91] CAA sec. 211(h)(5) also contains the language ''fuel blends containing gasoline and ten percent denatured anhydrous ethanol.'' Our changed interpretation of CAA sec. 211(h)(4) also has implications for CAA sec. 211(h)(5), which allows states to opt out of the 1-psi wavier provided by CAA sec. 211(h)(4) for particular areas upon a showing that the 1-psi waiver will increase emissions that contribute to air pollution. Because the language in CAA sec. 211(h)(5) pertaining to the 1-psi waiver is identical to the language in CAA sec. 211(h)(4), and both refer to the 1-psi waiver, we believe that both sections should be read together to apply the 1-psi waiver to E10 and E15. Accordingly, we interpret CAA sec. 211(h)(5) to allow states to opt out of the 1-psi waiver provided by CAA sec. 211(h)(4) for fuel blends containing gasoline and 9–15 percent denatured anhydrous ethanol.

[92] 55 FR 23660 (June 11, 1990).

[93] 55 FR 23660 (June 11, 1990) and 40 CFR 80.27(d)(2) (1987).

[94] 56 FR 24245 (May 29, 1991).

[95] See *Edison Electric Inst.* v. *EPA,* 2 F.3d 438, 451 (D.C. Cir. 1993) (holding that ''the deletion of a word or phrase in the throes of the legislative process does not ordinarily constitute, without more, evidence of a specific legislative intent.'').

other legislative history, explaining why Congress ultimately enacted the language in the CAA Amendments in lieu of the language in the House Bill and commenters have not provided any such explanation. There is no discussion, for example, of whether Congress felt that ''containing'' was sufficiently specific, or whether, as discussed above, the nature of the blending process was likely to make a requirement of ''at least'' ten percent difficult to meet in practice. Therefore, we do not find the failure to adopt the ''containing at least 10 percent'' language in the final bill persuasive as to whether Congress intended that meaning to be precluded under the statute.

Our interpretation is also supported by the purpose of the 1-psi waiver provision. The Senate Report published along with the enactment of the 1990 CAA Amendments and CAA sec. 211(h)(4) also describes both the purpose of including CAA sec. 211(h)(4), and general language about ethanol use in the fuel supply. The report states that the 1-psi waiver was:

> included in recognition that gasoline and ethanol are mixed after the refining process has been completed. It was recognized that to require ethanol to meet a 9 pound RVP would require the creation of a production and distribution network for sub-nine pound RVP gasoline. The cost of producing and distributing this type of fuel would be prohibitive to the petroleum industry and would likely result in the termination of the availability of ethanol in the marketplace. Under this provision, the RVP limitations promulgated pursuant to this subsection for such ethanol/gasoline blends shall be one pound per square inch greater than the applicable Reid vapor pressure which apply to gasoline. Senate Report 101–228, at 3495.

Finally, the Senate report states that the 1-psi waiver would ''allow ethanol blending to continue to be a viable alternative fuel, with its beneficial environmental, economic, agricultural, energy security and foreign policy implications.'' [96] Like E10 at the time of enactment, E15 currently requires the production and distribution of low-RVP blendstock and the cost of producing and distributing this type of blendstock has limited the availability of E15. While this legislative history does not speak to the meaning of the word ''containing,'' it does articulate congressional intent in enacting the provision, recognizing the role for ethanol in the marketplace. This report and other relevant legislative history do not explicitly address whether CAA sec. 211(h)(4) should apply to gasoline-ethanol blends that contain at least 10 percent ethanol and are sub sim under CAA sec. 211(f)(1) or have a waiver under CAA sec. 211(f)(4), but, as explained at proposal, the reasons it gives for extending the 1-psi waiver to gasoline-ethanol blends up to 10 percent ethanol would today similarly weigh in favor of interpreting the 1-psi waiver to apply to E15, given that Congressional action in CAA sec. 211(h) was largely a ratification of agency regulations for RVP (including the 1-psi waiver) that were initiated in 1987, under CAA sec. 211(c).

Our primary consideration has been to balance the goals of limiting gasoline volatility and ensure that the addition of ethanol does not cause the exceedance of the maximum RVP standard, while also promoting the use of ethanol consistent with the purpose of CAA sec. 211(h)(4). As previously explained, blending gasoline with at least 10 percent ethanol results in an approximate 1.0 psi RVP increase. It does not result in ''different volatility levels than already recognized by EPA as adding less than 1.0 psi RVP to gasoline.'' [97] Similarly, we also expect that E15 produced from the same BOB as E10 would have a similar (if not slightly lower) RVP than E10 and thus, would not exceed the current 10.0 psi RVP limit.[98] Therefore, we are confident that relative evaporative emissions effects for E15 would largely be similar or slightly less than those for E10, as discussed in Section II.F.

In sum, the primary consideration underlying the 1-psi waiver is to limit gasoline volatility while promoting the use of ethanol due to its importance to energy security and the agricultural sector. The interpretation in this action will continue to further these policy concerns given that agency action will now afford similar treatment to all gasoline-ethanol blends.

C. Interpretation of ''Substantially Similar'' for Gasoline

In this action, we are finalizing an interpretative rule which determines that E15 with an RVP of 9.0 psi is substantially similar to fuel used to certify Tier 3 light-duty vehicles (*i.e.,* E10 at 9.0 psi RVP) under CAA sec. 211(f)(1).[99] This new interpretation of sub sim would allow fuel manufacturers to introduce into commerce under CAA sec. 211(f)(1) E15 for use in MY2001 and newer light-duty motor vehicles because we find that E15 would have similar effects on the emissions (exhaust and evaporative), materials compatibility, and driveability when compared to Tier 3 E10 certification fuel when used in MY2001 and newer light-duty motor vehicles.[100] We are making this determination for E15 solely in order to provide E15 produced by fuel and fuel additive manufacturers the CAA sec. 211(h)(4) 1-psi waiver.

Additionally, we are not making this determination for E15 for use in MY2000 and older motor vehicles, heavy-duty gasoline engines and vehicles, on and off-highway motorcycles, and nonroad engines, vehicles, and equipment as we have determined that E15 is not ''substantially similar'' to Tier 3 E10 certification fuel when used in these vehicles, engines, and equipment.[101] Our technical justification for doing so is provided in Sections II.C.6–8.

This determination would make it lawful for any fuel or fuel additive manufacturer to make and introduce into commerce E15 at 10.0 psi RVP during the summer without the use of the E15 waivers under CAA sec. 211(f)(4). In conjunction with our interpretation of CAA sec. 211(h)(4) described in Section II.B, this would allow all parties the ability to lawfully introduce into commerce E15 at 10.0 psi RVP from May 1 through September 15 for use in MY2001 and newer light-duty vehicles, and is needed to effectuate the 1-psi waiver provided for E15 under our revised interpretation of CAA sec. 211(h)(4).[102]

[96] See S. Rep. No. 101–228 at 110 (December 20, 1989).

[97] Clean Air Act Amendments: Hearings on H.R. 2521, H.R. 3054 and H.R. 3196 Before the Subcommittee on Health and the House Committee on Environment and Committee On Energy and Commerce, 100th Cong. 1st Sess. (1987) (statement of Eric Vaughn, President and CEO of renewable Fuels Association).

[98] ''Determination of the Potential Property Ranges of Mid-Level Ethanol Blends.'' American Petroleum Institute, Washington, DC. April 2010.

[99] EPA does not have volatility standards on gasoline outside of the regulatory control period (May 1 through September 15), which includes the high ozone season (June 1 through September 15). For both the 2008 definition and the new definition, gasoline introduced into commerce outside of the regulatory control period is considered sub sim if it meets any gasoline volatility class in ASTM D4814. Tier 3 vehicles must be certified on fuels described at 40 CFR 1065.710(b). For purposes of this preamble, we refer to certification test fuel used in certification testing for Tier 3 motor vehicles that contains 10 volume percent ethanol as ''Tier 3 E10 certification fuel.'' Tier 3 E10 certification fuel has an RVP of approximately 9.0 psi.

[100] Auto manufacturers certified some light-duty motor vehicles using Tier 3 E10 certification fuel as early as MY2017 and almost all auto manufacturers must certify their light-duty motor vehicles using Tier 3 E10 certification fuel by MY2020.

[101] For purposes of this preamble, nonroad engines, vehicles, and equipment (including motorcycles and marine engines) are referred to as ''nonroad products.''

[102] Without the sub sim determination, only parties who are not fuel or fuel additive

Continued

Prohibitions on the use of E15 in all other on-road and non-road products that currently apply through regulations established under CAA sec. 211(c) remain in place, and parties that make and distribute E15, and ethanol for use in producing E15, would still need to satisfy the MMR requirements under 40 CFR part 80, subpart N. However, we are also including parameters within our definition of sub sim that fuel and fuel additive manufacturers take reasonable precautions to ensure that E15 is only used in vehicles, engines, and equipment for which E15 is sub sim to Tier 3 E10 certification fuel. This includes submission to EPA for approval of a misfueling mitigation plan as previously required under the partial waivers and discussed further in Section II.C.9.[103] This section outlines the background and rationale for our proposed interpretative rulemaking.

1. Certification Fuels

Historically, two fuels are utilized in EPA's emissions standards certification of gasoline-powered vehicles and engines: (1) Standardized gasoline with controlled parameters to ensure consistency across vehicle and engine certification used in emissions testing, and (2) commercially available mileage accumulation fuels used to ensure in-use durability of exhaust and evaporative emissions controls.[104] Historically, the fuel used in emissions testing (''certification test fuel'') contained no oxygenates (*e.g.,* ethanol) and was often referred to by its brand name, ''indolene.''

In the 2014 Tier 3 rulemaking, we updated the certification test fuel for Tier 3 certified motor vehicles and changed the certification test fuel from E0 to E10 to reflect the widespread use of E10 in the marketplace.[105] The requirement to use Tier 3 E10 certification fuel may have applied as early as MY2015 if a manufacturer elected to comply early with the Tier 3 vehicle emissions standards, but the requirement to use E10 in at least some vehicles began with MY2017. Almost all MY2020 and newer vehicles must be certified for emissions testing with Tier 3 E10 certification fuel, with some exceptions for small volume vehicle manufacturers, which must use Tier 3 E10 certification fuel by MY2022.

Service accumulation fuel for durability must be representative of commercially-available gasoline[106] and evaporative emissions durability must ''employ gasoline fuel for the entire mileage accumulation period that contains ethanol in, at least, the highest concentration permissible in gasoline under federal law and that is commercially available in any state in the United States.''[107] Since MY2004, service accumulation fuel used for evaporative system aging must contain the highest concentration of ethanol available in the market. After EPA partially granted the waivers for E15 in 2010 and 2011, we notified manufacturers in early 2012 that new evaporative emission families must be aged on E15 under 40 CFR 86.1824–08(f)(1).[108] We believe that auto manufacturers began evaporative system aging on E15 as early as MY2014.

2. History of ''Substantially Similar'' Interpretations

EPA has issued four interpretative rules that defined ''substantially similar'' for gasoline used in all gasoline-fueled vehicles. These interpretative rules describe the types of unleaded gasoline that are considered substantially similar to the unleaded gasoline utilized in our vehicle and engine certification programs, and place limits on a gasoline's chemical composition and physical properties, including the types and amount of alcohols and ethers (oxygenates) that may be added to gasoline. Fuels that are found to be substantially similar to certification fuels may be introduced into commerce. Each of our past interpretative rules provided an allowance for oxygenates within the gasoline. We last issued an interpretative rule on the phrase ''substantially similar'' for gasoline in 2008.[109] In that rulemaking, we allowed for the introduction into commerce of gasoline with modified testing procedures for introduction into commerce in Alaska. The current substantially similar interpretative rule for unleaded gasoline allows oxygen content up to 2.7 percent by weight for certain ethers and alcohols. Despite having changed certification test fuel to include 10 volume percent ethanol, prior to this proposed action, we have not addressed what should be considered substantially similar to Tier 3 E10 certification fuel utilized in Tier 3 light-duty vehicle certification.

In defining what fuels are sub sim to certification fuels, we have listed general physical and chemical characteristics, such as oxygen content, after determining that fuels and fuel additives meeting these general ''sub sim'' characteristics will not adversely affect emissions. In our past interpretations defining what physical and chemical characteristics are necessary to make a fuel or fuel additive ''sub sim'' to certification test fuel, we have taken three primary factors into account: (1) Emissions, (2) materials compatibility, and (3) driveability.[110] [111]

We initially specified that fuel with oxygen content up to 2.0 weight percent is sub sim to certification test fuel.[112] We later revised the definition to allow oxygen content up to 2.7 weight percent for gasoline containing aliphatic ethers and/or alcohols (excluding methanol), finding, based on data and our experience with CAA sec. 211(f)(4) waiver applications, that such levels would not result in emissions, materials compatibility, or drivability problems compared with certification test fuel.[113] Thus, we have a history of establishing maximum oxygen content as a criterion, in addition to other criteria, for determining whether a fuel or fuel additive is substantially similar to a fuel utilized in certification.

With respect to fuel volatility, our sub sim interpretations have specified that in order to qualify as sub sim to certification test fuel, which has

manufacturers as defined in 40 CFR 79.2, as discussed in the NPRM and in Section II.D.3, could introduce E15 into commerce at 10.0 psi in the summer.

[103] Companies that already have an approved misfueling mitigation plan under the E15 CAA sec. 211(f)(4) waivers will not need to submit for approval a separate plan under the sub sim interpretative rule in this action.

[104] See 46 FR 38582 (July 28, 1981).

[105] See 79 FR 23414 (April 28, 2014).

[106] See 40 CFR 86.113–15(a)(5).

[107] See 40 CFR 86.1824–08(f)(1).

[108] As described in 40 CFR 86.1803–01, an evaporative/refueling emissions family is ''the basic classification unit of a manufacturers' product line used for the purpose of evaporative and refueling emissions test fleet selection and determined in accordance with § 86.1821–01.'' This allows manufacturers of motor vehicles to group models that have similar evaporative emission control systems into a single family for purposes of certifying all models within the family to applicable evaporative emissions standards.

[109] See 73 FR 22281 (April 25, 2008).

[110] See 56 FR 5352 (February 11, 1991).

[111] For example, we have interpreted that only fuels and fuel additives with a chemical composition of carbon, hydrogen, oxygen, nitrogen, and sulfur (CHONS) are sub sim under 211(f)(1). Non-CHONS chemical compositions of fuels and fuel additives can impair emission controls resulting in increased emissions or ultimately failure of the emission controls, especially over time. We have also historically been concerned with higher levels of oxygen content as increased oxygen content in gasoline can result in enleanment of the air-fuel ratio leading to higher emissions as well as higher exhaust temperatures that can degrade emission controls over time, especially in vehicles and engines that lack adaptive fuel controls that adjust to oxygenate levels in fuels (*e.g.,* MY2000 and older light-duty motor vehicles).

[112] See 45 FR 6743 (October 10, 1980). 2.0 weight percent oxygen equates to approximately 5.7 volume percent ethanol.

[113] See 56 FR 5352 (February 11, 1991). 2.7 weight percent oxygen equates to approximately 7.7 volume percent ethanol.

historically had an RVP of 9.0 psi in light of the vehicle test conditions being reflective of summer conditions, fuels need only ''meet ASTM standards in general, that is, not necessarily for every geographic location and time of year.'' [114] To qualify as sub sim, gasoline (whether or not containing ethanol) ''must possess, at time of manufacture, all the physical and chemical characteristics of an unleaded gasoline as specified in ASTM D4814–88 for at least one of the Seasonal and Geographical Volatility Classes specified in the standard.'' [115]

3. Interpretation of CAA Sec. 211(f)(1)

In this action, we are putting forth a new interpretation of CAA sec. 211(f)(1). Recognizing the changed gasoline marketplace, and the multiple certification fuels used today, as compared to 1981, 1991, and even 2008, when the previous definitions of ''substantially similar'' were articulated, we are interpreting CAA sec. 211(f)(1) to find that E15 is substantially similar to Tier 3 E10 certification fuel for use in MY2001 and newer motor vehicles. This finding is consistent with the statutory text and purpose of CAA sec. 211(f)(1) and appropriate given the changed circumstances since our previous interpretations of what is ''substantially similar.'' [116]

Significant changes have occurred in the time period since CAA sec. 211(f)(1) was enacted and since we have had cause to interpret 211(f)(1) and to determine what fuels qualify as sub sim to our certification fuels. First, we partially granted a CAA sec. 211(f)(4) waiver that created a subset of gasoline fuel, E15 that can only be used in MY2001 and newer light-duty motor vehicles. We have information that the use of E15 in certain light-duty motor vehicles, as well as heavy-duty vehicles and nonroad vehicles, engines, and equipment, could cause or contribute to emission system failures.[117] Second, we have modified the certification fuel on which light-duty vehicles are certified from indolene (gasoline containing no ethanol) to Tier 3 E10 certification fuel for light-duty vehicles. We have not modified the certification fuel for other gasoline-powered vehicles, engines, and equipment. This action resulted in a split in the national vehicle and engine fleet by the certification fuel used to certify gasoline-powered vehicles, engines, and equipment: Tier 3 certified vehicles certified on Tier 3 E10 certification fuel and all other vehicles and engines certified on indolene. The use of Tier 3 E10 certification fuel also provides a new comparison point to determine which fuels would be considered substantially similar in all gasoline-powered vehicles, engines, and equipment. Additionally, E10, as discussed in Section II.A.2, has become the predominant fuel used in gasoline powered motor vehicles.

These two actions have resulted in a gasoline pool that is no longer interchangeable in all vehicles and engines. Unleaded gasoline, a fuel which we have interpreted CAA sec. 211(f)(1)(B) to apply, can be used in light-duty vehicles, as well as heavy-duty vehicles, and nonroad engines and equipment, including motorcycles and marine engines. However, as a result of the 211(f)(4) waivers for E15, we know that fueling a subset of those vehicles and engines with unleaded gasoline that is E15 will result in emissions exceedances. Since E15 has increased in availability in the gasoline marketplace as discussed in Section II.A.2 and may increase in the future, as discussed in Section II.E, it is important that E15 be introduced into commerce only for those vehicles for which it can be used without concerns over emissions, materials compatibility, or driveability.

We find that it would be inappropriate to allow the introduction into commerce of E15 for use in all gasoline-powered vehicles and engines in light of the demonstrated adverse impacts on emission systems due to the use of E15 MY2000 and older motor vehicles, heavy-duty gasoline engines and vehicles, on and off-highway motorcycles, and nonroad engines, vehicles, and equipment. However, we do find that E15 is substantially similar to E10 when used in MY2001 and newer motor vehicles. Therefore, in this action, we are finalizing an interpretation of CAA sec. 211(f)(1) that accounts for the changed circumstances in both the fuel pool, the certification fuels, and vehicle fleet since we last interpreted this section.

As discussed in Section II.B, EPA has the ability to modify its interpretation of statutory provisions. We are doing so for our interpretation of CAA sec. 211(f)(1). Our past ''substantially similar'' interpretative rules have not attempted to limit the scope of the vehicles and engines for which fuels would be considered sub sim to our certification fuels. Rather, they put forth an interpretation regarding how EPA would determine whether a new fuel or fuel additive is ''substantially similar'' for general use in all gasoline powered engines, vehicles and equipment. When EPA took those previous actions, we had no information before us that indicated that use of those new fuels or fuel additives in certain subsets of vehicles or engines may be inappropriate. Therefore, there was no need for EPA to consider limitations or other criteria to modify the sub sim interpretation to a particular subset of vehicles or engines.

In previous determinations of CAA sec. 211(f), we looked broadly at the use of the new fuel or fuel additive in all gasoline-powered engines, vehicles, and equipment. This was appropriate at that time because all gasoline-powered engines, vehicles and equipment were certified using essentially the same fuel and were compatible with any gasoline. Now, in light of the CAA sec. 211(f)(4) waivers, and the changed certification fuel, E15 can be used in MY2001 and newer motor vehicles but its use in other gasoline powered products has demonstrated adverse effects on emissions and materials compatibility. The legislative history of the 1977 CAA Amendments makes clear that the purpose of CAA sec. 211(f) is to ensure that the introduction of new fuels and fuel additives into commerce does not adversely impact vehicle emissions.[118]

We retain certain aspects of previous interpretations. The first E15 sec. 211(f)(4) waiver decision, in 2010, was the last occasion on which we articulated our interpretation of CAA sec. 211(f), including the relationship between the CAA sec. 211(f)(1) provision and the CAA sec. 211(f)(4) waiver provision.[119] We stated that the CAA sec. 211(f)(1) ''prohibition has evolved over time,'' but ''the concept of applying this prohibition based on the relevant subset of vehicles continues.'' [120] For example, we explained that ''diesel fuel does not need to be substantially similar to the fuel used in the certification of gasoline vehicles, and E85 does not need to be substantially similar to fuel used in the

[114] See 46 FR 38585 (July 28, 1981).

[115] See 73 FR 22281 (April 25, 2008).

[116] In this action, we are putting forth a new definition of what is ''substantially similar'' to Tier 3 E10 certification fuel. We are also operating under a new interpretation of CAA sec. 211(f)(1) that requires the examination of the entire scope of vehicles and engines that could use E15, given that Tier 3 E10 certification fuel is only utilized in the certification of a subset of the vehicle and engine fleet. Our discussion of our changed interpretation of CAA sec. 211(f)(1) in this section applies both to our general interpretation of the meaning of CAA sec. 211(f)(1) and the scope of analysis and to our justification for a new substantially similar definition.

[117] See 76 FR 4662 (January 26, 2011).

[118] See S. Rep. 95–127, (95th Cong., 1st Sess.), at 90 (''The Administrator may waive the prohibition if the applicant establishes that the additive will not impair the emission performance of vehicles produced in model year 1975 and subsequent years.'').

[119] 75 FR 68145 (November 4, 2010).

[120] Id.

certification of diesel vehicles.'' [121] We also recognized that, in approving a fuel as substantially similar, EPA could consider narrow as well as broad subsets of motor vehicles when evaluating a fuel or fuel additive for introduction into commerce under CAA sec. 211(f)(1).

In assessing whether a fuel is substantially similar to a certification fuel, we must look only to its use in the engines and vehicles within which it can be used, and not its use in vehicles and engines which are fueled by other types of fuel. Consistent with our past interpretation, we again find that the use of the term ''any'' in the prohibition (''any . . . vehicle or engine'') does not mean all motor vehicles or 100 percent of the motor vehicle fleet.[122] This is supported by the plain meaning of the term ''any,'' which can mean ''one, some, or all indiscriminately of whatever quantity.'' [123]

As discussed further in Section 1.3.2.2 of the RTC, the use of the phrase ''any fuel utilized in the certification of any model year 1975, or subsequent model year, vehicle or engine'' clearly encompasses fuels utilized in subsequent model years, such as Tier 3 E10 certification fuel. In particular the reference to a certification fuel for a ''subsequent model year'' permits our comparison of E15 to Tier 3 E10 certification fuel, a fuel utilized in the certification of MY2020 and later light-duty motor vehicles.

For this CAA sec. 211(f)(1) sub sim interpretation we are faced for the first time, however, with a situation where there are different gasolines used in the certification of different gasoline vehicles and equipment, and a different in-use gasoline (E15) that can only be used in a subset of in-use vehicles and engines. Because of this, the appropriate scope of review is all of the various vehicles and engines within which gasoline can be used, and our assessment under sub sim evaluates the appropriateness of fueling those vehicles and engines with various gasoline-ethanol blends. In this unique circumstance, we have the benefit of the CAA sec. 211(f)(4) waiver analyses that supported partial grants of CAA sec. 211(f)(4) waivers for E15 in 2010 and 2011. These data provide technical information useful to informing our sub sim analysis for E15. The use of data collected or analyzed in the context of a CAA sec. 211(f)(4) to inform a sub sim determination under CAA sec. 211(f)(1) is consistent with our prior practice. For example, in making the sub sim determination in our 1991 sub sim interpretive rule, we considered evidence that supported the CAA sec. 211(f)(4) waivers granted to methanol.[124] Based on the data in those waiver analyses, as well as additional data gathered in the eight years since that waiver, we have assessed whether E15 is sub sim to the Tier 3 E10 certification fuel for use in all of the vehicles and engines that could be exposed to fueling on E15 in-use.

In this action, we are also extending our assessment beyond those vehicles and engines certified under CAA sec. 206. We are again in a unique circumstance where due to our analysis under the CAA sec. 211(f)(4) waiver (which covers all motor vehicles, motor vehicle engines, nonroad engines, and nonroad vehicles), we have knowledge of the use of E15 in particular vehicles and engines causing or contributing to emission systems failures.[125] Because we have the benefit of this information, we find it appropriate to assess under 211(f)(1) whether E15 is sub sim to E10 when used in those vehicles and engines. Some of these vehicles and engines are certified under CAA sec. 213(a).[126] Therefore, we are also looking at whether E15 is sub sim to Tier 3 E10 certification fuel when used in nonroad products certified under CAA sec. 213(a).

In the proposal, we suggested that the comparison was relatively narrow—comparing the use of E15 to the use of Tier 3 E10 certification fuel in Tier 3 vehicles alone; *i.e.,* the fuel utilized in the certification of that vehicle or engine. We received many comments suggesting this is not an appropriate assessment under CAA sec. 211(f)(1) and we are not taking this approach in this action. Instead, we have concluded that it is appropriate to broaden our analysis to consider the use of E15 in all vehicles and engines that could be exposed to fueling on E15 in-use to determine whether E15 is substantially similar to Tier 3 E10 certification fuel.

Many commenters suggested that CAA sec. 211(f)(1) should be protective of all vehicles and engines in the fleet. We agree, and this action protects vehicles and engines by finding that the use of E15 in any MY2000 or older light-duty gasoline motor vehicle, any heavy-duty gasoline motor vehicle or engine, any highway or off-highway motorcycle, or any gasoline-powered nonroad engines, vehicles or equipment is not sub sim to Tier 3 E10 certification fuel. We also maintain the prohibition on use in these vehicles, engines and equipment implemented in the MMR.[127] These actions are being taken to protect the vehicles and engines for which use of E15 would be harmful.

In past sub sim interpretative rules, we have provided physical and chemical characteristics of fuels and fuel additives that would be considered sub sim to certification fuel. These interpretative rules broadly applied to a variety of fuel and fuel additives. Then, at registration, fuel and fuel additive manufacturers must demonstrate whether their fuel or fuel additive is sub sim or has a CAA sec. 211(f)(4) waiver from being sub sim.

In this interpretative rule we are taking both steps for E15 as compared to tier 3 E10 certification fuel—interpreting what is ''substantially similar'' to tier 3 E10 certification fuel, and providing a narrow definition for gasoline-ethanol blends containing greater than ten and less than 15 percent ethanol, and fuel additives utilized in that fuel that is sub sim to tier 3 E10 certification fuel and determining that E15, as a fuel, is sub sim. We are putting forth our determination that E15 meeting certain criteria is sub sim when used in MY2001 and newer light-duty vehicles.

4. Criteria for Determining Whether a Fuel Is ''Substantially Similar''

In this action, we are considering whether E15 is sub sim to Tier 3 E10 certification fuel when used in all motor vehicles and motor vehicle engines certified under CAA sec. 206 and nonroad products certified under CAA sec. 213(a).

As discussed in Section II.A.4, CAA sec. 211(f)(1) prohibits fuel and fuel additive manufacturers from introducing into commerce fuel or fuel additives that are not substantially similar to fuel or fuel additives utilized in the certification of motor vehicles. CAA sec. 211(f)(4) provides a waiver from this prohibition for fuels and fuel additives that can be established that such fuel or fuel additive, or a specified

[121] Id.

[122] Id.

[123] Webster's Third New International Dictionary (1976); see *Green* v. *Biddle,* 21 U.S. 1, 38 (1823) (''where the words of a law, treaty, or contract, have a plain and obvious meaning, all construction, in hostility with such meaning, is excluded'').

[124] 56 FR 5352, 5353 (February 11, 1991). We explained that ''although methanol is not included in the group of aliphatic alcohols and ethers covered by today's [sub sim interpretive rule] revision, the evidence in these fuel waiver dockets involving methanol supports the conclusion that unleaded gasolines containing aliphatic ethers and/or alcohols (excluding methanol), at up to 2.7 percent oxygen by weight, are substantially similar to unleaded gasoline used in light-duty vehicle emissions certification.'' Id.

[125] See 75 FR 68144 (November 4, 2010).

[126] CAA sec. 213(a)

[127] 40 CFR 80.1504(a)(1).

concentration thereof, will not cause or contribute to a failure of any emission control device or system (over the useful life of the motor vehicle, motor vehicle engine, nonroad engine, or nonroad vehicle in which such device or system is used) to achieve compliance by the vehicle or engine with the emission standards to which it has been certified pursuant to CAA sec. 206 and 213(a).

To make this assessment, we have generally considered the effects of a fuel or fuel additive on emissions (exhaust and evaporative), materials compatibility, and driveability for motor vehicles and motor vehicle engines certified under CAA sec. 206.[128]

The criteria we consider when determining whether a fuel or fuel additive is sub sim to certification fuel under CAA sec. 211(f)(1) are similar to those criteria we consider when determining whether a new fuel or fuel additive should receive a waiver to CAA sec. 211(f)(1) under CAA sec. 211(f)(4). When determining whether a fuel or fuel additive is sub sim to certification fuel under CAA sec 211(f)(1), we have interpreted the criteria of emissions, materials compatibility, and driveability as necessary to ensure that any fuel or fuel additive determined to be sub sim will not impair the emission controls of vehicles, engines, and equipment, as intended by Congress. While the areas for consideration under CAA sec. 211(f)(1) and sec. 211(f)(4) are similar, the requirements in each provision differ. CAA sec. 211(f)(1) only requires that fuels be sub sim to certification fuel, while CAA sec. 211(f)(4) requires that the new fuel or fuel additive will not cause or contribute to any vehicles or engines exceeding their emissions standards over the fuel useful life of the vehicles or engines.

In practice, EPA has implemented CAA secs. 211(f)(1) and 211(f)(4) by evaluating similar criteria when defining which fuels are sub sim and when evaluating 211(f)(4) waiver requests (*i.e.,* emissions, materials compatibility, and driveability).[129] This is because these three areas speak both to whether a fuel or fuel additive is sub sim to certification fuel and whether such a fuel will damage a vehicle or engine's emission controls. We consider these criteria to be intrinsically linked as they are intended to answer the same question: Whether a fuels or fuel additive will harm emissions controls on vehicles and engines or result in increases in regulated emissions.

Furthermore, we believe that any new fuel or fuel additive that would cause or contribute to vehicles and engines exceeding emissions standards is, by definition, not substantially similar to certification fuel under sub sim. Given the intent of CAA sec. 211(f)(1) to protect emission controls, it would be inappropriate to define sub sim in a manner that included fuels or fuel additives that caused or contributed to vehicles exceeding their emissions standards. As a result, we have in the past interpreted sub sim conservatively to help ensure that this situation did not arise. We continue to believe that this is appropriate to ensure that CAA sec. 211(f)(1) protects the emission controls of vehicles and engines certified under CAA secs. 206 and 213. We also believe the converse is true for newer light-duty motor vehicles (*i.e.,* MY2001 and newer). In older vehicles, especially MY2000 and older motor vehicles, where certified emission standards were relatively less stringent than more modern standards (*i.e.,* National Low Emission Vehicle (NLEV), Tier 2, and Tier 3 vehicle emission standards), there was a substantial amount of headroom (*i.e.,* the amount between the actual level at which a vehicle is certified and the standard that the vehicle is subject to, typically around 50 percent of the standard,[130] which allowed for fuels or fuel additives to significantly increase emissions in absolute terms without causing vehicles to exceed emission standards. In modern vehicles, with more stringent emissions standards, it is almost impossible to have large, absolute increases in emissions and have a vehicle or engine meet its emissions standards. Even small absolute changes in emissions can cause vehicles to exceed emission standards. We believe that when a relative increase in the emissions profile of a new fuel or fuel additive compared to a certification fuel is sufficient to result in vehicles and engines exceeding certified emissions standards in use, the new fuel or fuel additive is not substantially similar to the certification fuel since there is very little room in standards for small absolute changes. Thus, while our analysis accompanying the E15 partial waivers considered whether E15 caused or contributed to vehicles and engines exceeding emissions standards over the full useful lives of the vehicles, we believe that the same analysis can inform our determination and in what circumstances E15 is sub sim to Tier 3 E10 certification fuel.

In order to determine whether E15 is sub sim to Tier 3 E10 certification fuel, we must consider the effects that E15 would have on all vehicles, engines, and equipment relative to Tier 3 E10 certification fuel. For each class of vehicles, engines, and equipment, we need to evaluate E15's relative effect on emissions, materials compatibility, and driveability. For the most part, we have already considered the effects of E15 on all vehicles, engines, and equipment certified under CAA secs. 206 and 213 in the E15 partial waivers and the MMR. In those actions, we evaluated the effect of E15 use on emissions (exhaust and evaporative), materials compatibility, and driveability over the full useful lives of MY2000 and older motor vehicles, MY2001 and newer light-duty motor vehicles, nonroad products (including motorcycles and marine engines), and heavy-duty gasoline-fueled vehicles. While the focus of the analysis for the E15 waiver decisions was on E15 relative to indolene (*i.e.,* E0) and this sub sim determination is on E15 relative to E10, we generally anticipate that there would be less differences when E15 is compared to E10 in the national vehicle and engine fleet. A summary of our finding for these classes of vehicles and engines is presented below, but the full discussion and all data and literature used to support our findings is contained in the E15 waivers and the MMR and are incorporated here by reference and included in the docket. Although we incorporate the discussion and all data and literature in support of the E15 partial waivers, we are not reopening those waivers with this action. We separately discuss in sections II.C.6–8 the following vehicles and classes:

- MY2000 and older motor vehicles
- MY2001 through 2019 light-duty motor vehicles
- MY2020 and newer light-duty motor vehicles (*i.e.,* Tier 3 vehicles)
- Vehicles, engines, and equipment prohibited from E15 use

Since Tier 3 certified vehicles did not exist at the time of the E15 waivers and the MMR, we consider those vehicles separately from the MY2001–2019 light-duty vehicles. As described in Section II.C.9, it is appropriate for us to restrict the applicability of this new definition of sub sim to only those vehicles, engines, and equipment for which we are determining that E15 is sub sim to Tier 3 certification fuel.

5. Impact of Volatility on ''Substantially Similar''

In determining whether a fuel is substantially similar, our analysis compares a fuel (in this case, E15) to a fuel utilized in the certification of motor vehicles (in this case, Tier 3 E10 certification fuel). Our certification fuel

[128] See, *e.g.,* 56 FR 5354 (February 11, 1991).

[129] See 75 FR 68144–68145 (November 4, 2010).

[130] See 75 FR 68111 (November 4, 2010).

regulations specify a volatility limit for Tier 3 E10 certification fuel of 9.0 psi.[131] In this action, we are also considering our sub sim interpretation, in the context of our interpretation of CAA sec. 211(h)(4) described above.

EPA proposed two alternative analyses for a sub sim interpretation for E15. The first analysis compared E15 at 10.0 psi—*i.e.,* after application of the CAA sec. 211(h)(4) waiver—to E10 certification fuel at 9.0 psi RVP. The second analysis compared E15 at 9.0 psi RVP to E10 certification fuel at 9.0 psi RVP. For the reasons explained below, we have adopted the latter interpretation in this final action—comparing E15 at 9.0 psi RVP to E10 certification fuel at 9.0 psi RVP. As stated in Section II.A.1, CAA sec. 211(f) exists to protect the emissions control systems of vehicles and engines and thus prevent the degradation of those systems. The emissions control systems of vehicles and engines have become increasingly sensitive to changes in volatility as emissions standards have become increasingly stringent over time. Therefore, changes in volatility can also affect the efficacy of evaporative emissions systems. It would be inappropriate to completely ignore the volatility of a fuel in evaluating whether it is sub sim, especially as volatility relates to evaporative emissions. We continue to believe that the volatility of fuel is important to consider when determining whether a fuel or fuel additive is substantially similar to fuel utilized in the certification of vehicles and engines under CAA sec. 211(f)(1). In particular, the volatility of fuels can have a significant impact on the evaporative emissions (as well as exhaust emissions) from a vehicle, one of the considerations EPA has analyzed under sub sim historically and in this action, as described in this section.

In the proposal, we suggested that it may be appropriate to utilize our previous approach to volatility in a sub sim determination. In previous sub sim interpretative rules and corresponding definitions, we have required gasoline to only meet the volatility requirement of a single volatility class defined in ASTM Standard D4814–88, which range from 7.0 psi to 15.0 psi over the course of the year. We viewed this as appropriate when considering fuels and fuel additives that themselves are not impacting the volatility of gasoline during the summer months. When volatility impacts do not impair evaporative emissions controls that are important to air quality, we only need to consider the volatility impacts of the fuel or fuel additive to ensure that the fuel still falls within the bounds of what is considered to be gasoline. Therefore, we do not find it would be appropriate to compare E15 at 10.0 psi to E10 at 9.0 psi.

In this action, we are providing a new interpretation of CAA sec. 211(h)(4) that applies the 1-psi waiver to ethanol blends greater than 10 but no more than 15 volume percent ethanol. There, Congress provided a 1-psi waiver for the blending of gasoline-ethanol blends in order to promote ethanol blending in gasoline and ensure that those gasoline-ethanol blends could remain in use. CAA sec. 211(h)(4) does not provide any additional analysis or consideration for EPA prior to the application of the 1-psi waiver, nor does it provide guidance to EPA on the operability of the statutory provisions. E15 will be treated similarly to E10 under CAA secs. 211(f)(1) and 211(h)(4); blendstocks produced by fuel and fuel additive manufacturers typically meet a lower-RVP standard, and then, upon addition of ethanol by downstream parties, the blended fuel is given an RVP allowance, allowing up to 1.0 psi higher RVP. The approach we are taking gives meaning to both 211(f)(1) and its consideration of volatility in determining whether a fuel is sub sim, and 211(h)(4) which provides the 1-psi waiver. Therefore, the 1-psi waiver operates after other limitations on the introduction of E15 into commerce.

Therefore, the analysis under CAA sec. 211(f) is limited in scope in this particular situation. We need not address the 1-psi waiver that is expressly provided in another provision of CAA sec. 211 by analyzing emission impacts at the volatility level provided through the waiver in order to determine whether a fuel is substantially similar to a certification fuel. In this case, we need not look at the emissions impacts of E15 at 10.0 psi RVP because CAA sec. 211(h)(4), as interpreted in this action, will itself allow for the 1-psi waiver for E15. It is not the case that volatility is wholly irrelevant to our evaluation of what is sub sim, given that the level of RVP for gasoline certification fuel used to certify motor vehicles is 9.0 psi, but rather in this case, we find it would be inappropriate to limit under sub sim the volatility of a fuel that Congress allowed a 1-psi waiver from the volatility standard, under CAA sec. 211(h)(4). Our determination under sec. 211(f)(1) only allows E15 to be introduced into commerce without a CAA sec. 211(f)(4) waiver.[132] It is the operation of CAA sec. 211(h)(4) that allows E15 to receive the 1-psi waiver, resulting in E15 having to meet a 10.0 psi RVP limit, rather than a 9.0 psi RVP limit.

It follows that our point of comparison is E15 at 9.0 psi to Tier 3 E10 certification fuel (*i.e.,* E10 at 9.0 psi). Additionally, our finding in this action that E15 is substantially similar to Tier 3 E10 certification fuel when used in MY2001 and newer light-duty motor vehicles is limited to E15 at 9.0 psi. In considering whether E15 is sub sim to tier 3 E10 certification fuel in the areas of materials compatibility, emissions, and driveability, we have done so comparing E15 at 9.0 psi to Tier 3 E10 certification fuel at 9.0 psi. This approach recognizes the importance of volatility on evaporative emissions, one of the criteria we have historically considered in evaluating whether a fuel is sub sim.

6. Technical Rationale and Discussion for Tier 3 Vehicles (MY2020 and Newer)

As discussed above, we have considered whether a fuel has similar effects on emissions, materials compatibility, and driveability when defining what fuels are substantially similar to certification fuel. Based on existing data and our engineering judgement, we have concluded that E15 at 9.0 psi RVP, with its additional oxygen content, would have effects on emissions, materials compatibility, and drivability substantially similar to Tier 3 E10 certification fuel (also at 9.0 psi RVP) in Tier 3 vehicles. While test data is still limited on Tier 3 vehicles, we have been able to draw upon test data and information on prior year motor vehicles (primarily NLEV and Tier 2 certified vehicles representative of MY2001 and newer light-duty motor vehicles) to support this conclusion as the impacts on Tier 3 motor vehicles are expected to be of a similar or lesser concern than on prior year motor vehicles.

a. Exhaust Emissions

In the 2010 and 2011 CAA sec. 211(f)(4) partial waivers for E15, we concluded from available data that neither the immediate combustion effects nor the long-term durability impacts of operating on E15 would prevent MY2001 and newer light-duty motor vehicles from complying with their full useful life emission

[131] See 79 FR 23414, 23526 (April 28, 2014). See also 40 CFR 1065.710.

[132] E10 was granted a waiver under CAA sec. 211(f)(4) without any conditions, in contrast to other CAA sec. 211(f)(4) waivers, which included, for example, conditions on fuel characteristics such as RVP.

standards.[133] This decision was supported by a large study conducted by DOE that tested 27 high-sales vehicles spanning model years 2000 to 2007 [134] using ethanol splash blends made from Tier 2 certification gasoline (E0).[135] Analysis of the resulting data shows that E15 produced approximately 5 percent higher nitrogen oxides (NO_X), 4 percent higher non-methane organic gases (NMOG), and 4 percent lower CO compared to E10, though none of these differences was statistically significant. This work did not measure particulate matter (PM) emissions, but the expectation at the time was that PM should react to ethanol in a similar way as NMOG emissions.

Since the time of the 2010 and 2011 waiver decisions, additional data have been published on the effects of gasoline-ethanol blends on Tier 2 vehicles.[136] The EPAct/V2/E–89 study (referred to as the ''EPAct study''), jointly conducted by EPA, DOE/National Renewable Energy Laboratory (NREL), and the Coordinating Research Council (CRC) in 2009 to 2010, looked at the short-term effects of five fuel properties, including ethanol concentration, on emissions from 15 high-sales light-duty vehicles from MY2008. Measurements included gaseous pollutants, and PM, a pollutant whose relationship to fuel properties had previously not been examined in much detail for gasoline vehicles. The size and scope of this study allowed for statistical models to be developed that could be used to correlate the impacts of the five fuel properties, including ethanol concentration, on emissions, enabling projections to be made of the emission impacts of a wide range of fuels, not limited to those tested. Results generally confirmed the NO_X and CO emission impacts described above from the addition of ethanol to gasoline, while indicating that the effects on NMOG and PM are more complex and depend on other fuel parameters, such as the fuel's distillation profile and aromatics content.[137] [138] For example, comparing E15 and E10 fuels in the DOE study, the EPAct statistical models estimate approximately 2 percent higher NO_X, 4 percent lower NMOG, 2 percent lower CO, and 2 percent higher PM for E15. If we instead assume E10 market fuel as a starting point, the EPAct models project splash blending to E15 will produce 2 percent higher NO_X, 2 percent higher NMOG, 2 percent lower CO, and 4 percent higher PM.[139]

Another observation from this study was that the sensitivity of emissions to ethanol blending varied significantly across the test vehicles. Because the EPAct test fleet was designed to include a range of high-sales vehicles, it is reasonable to expect the average effect across the test vehicles to be representative of the in-use fleet of Tier 2 vehicles with port-fuel-injection.

Two studies (projects E–94–2 and E–94–3) published by CRC in 2017 and 2018, respectively, examined the effects of ethanol and PM Index on PM and other emissions from MY2012 to2015 Tier 2 vehicles, all with gasoline direct injection (GDI) engines and several with turbocharging.[140] [141] The E–94–2 study used a parametric design, meaning one fuel property was changed at a time while holding others constant; so for example, test fuels differing in ethanol content were matched in PM Index, T50, RVP, and several other properties.[142] Results for the overall test fleet of 16 vehicles in E–94–2 showed no statistically significant effect of E10 relative to E0 for total hydrocarbons (THC), NO_X, or CO, while PM increased by 19 percent for the regular-grade (87 anti-knock index or AKI) test fuels. The E–94–3 study tested a four-vehicle subset on four E10 splash blends made from the E0 fuels in E–94–2, and found a PM increase of 21% on average, consistent with the effect found in the larger E94–2 study. Assuming this PM effect is linear over small fuel changes, we would expect around 10 percent higher PM when moving from E10 to E15. Comparing these results to the EPAct study and DOE study above suggests that later-technology vehicles with direct injection (though still certified to Tier 2 emission standards) have equal or lower sensitivity to ethanol for gaseous emissions, but may be more sensitive for PM.

Another study published in 2018 by the University of California, Riverside Center for Environmental Research and Technology (CE–CERT) looked at the effects of ethanol and aromatics on emissions from five vehicles, model years 2016 or 2017, all with GDI engines and certified to Tier 3 and/or LEV III standards.[143] While this provides a useful look at recent-model technology impacts, it should be noted that, because this study only employed five test vehicles, we are less certain how well this study's average effects represent this technology type in the in-use fleet. The test fuels included E0, E10, and E15 that were closely aligned on aromatic content (at two levels, 21 percent and 29 percent by volume) but the mid-point distillation temperature (T40–T50) was uncontrolled, and declined significantly as the ethanol content increased.[144] Results of this study showed no statistically significant difference in NO_X, non-methane hydrocarbons (NMHC), or PM when comparing E15 to E10 at either aromatics level. While not statistically significant, a trend of increasing PM with an increase in ethanol content was observed at the higher aromatics level, suggestive of a reinforcing interaction between ethanol and aromatics that has been described in other published work. At the lower aromatics level, the trend

[133] See 75 FR 68096 (November 4, 2010).

[134] This study was designed to evaluate the long-term exhaust emissions effects of E15 on NLEV and Tier 2 light-duty vehicles.

[135] Knoll, K., West, B., Huff, S., Thomas, J. et al., ''Effects of Mid-Level Ethanol Blends on Conventional Vehicle Emissions,'' SAE Technical Paper 2009–01–2723, 2009. This preamble refers to this study as ''the DOE study''.

[136] Tier 2 vehicles generally include light-duty motor vehicles produced between MY2007–2019. Some manufacturers began making Tier 2 vehicles as early as MY2004 and some can continue to do so as late as MY2021.

[137] EPA Office of Transportation and Air Quality. ''EPAct/V2/E–89: Assessing the Effect of Five Gasoline Properties on Exhaust Emissions from Light-Duty Vehicles Certified to Tier 2 Standards: Final Report on Program Design and Data Collection''. EPA–420–R–13–004. April 2013. The preamble refers to this as ''the EPAct Study''.

[138] Butler, A., Sobotowski, R., Hoffman, G., and Machiele, P., ''Influence of Fuel PM Index and Ethanol Content on Particulate Emissions from Light-Duty Gasoline Vehicles,'' SAE Technical Paper 2015–01–1072, 2015, doi:10.4271/2015–01–1072.

[139] Since these figures represent the output of multivariate models whose coefficients survived a process of statistical testing, they are interpreted as meaningful despite being small.

[140] Morgan, Peter; Smith, Ian; Premnath, Vinay; Kroll, Svitlana; Crawford, Robert. ''Evaluation and Investigation of Fuel Effects on Gaseous and Particulate Emissions on SIDI In-Use Vehicles''. SwRI 03.20955. Southwest Research Institute, San Antonio, TX. CRC E–94–2. Coordinating Research Council, Alpharetta, GA. March 2017.

[141] Morgan, Peter; Lobato, Peter; Premnath, Vinay; Kroll, Svitlana; Brunner, Kevin; Crawford, Robert. ''Impacts of Splash-Blending on Particulate Emissions for SIDI Engines''. SwRI 03.20955–1. Southwest Research Institute, San Antonio, TX. CRC E–94–3. Coordinating Research Council, Alpharetta, GA. June 2018.

[142] This parametric study design is referred to as ''match blending'', where the hydrocarbon components of each test fuel are adjusted so that specific properties, such as octane, RVP, and/or aromatics content, are matched across different ethanol levels in the final blends. This is in contrast to ''splash blending'', where no effort is made to control fuel properties as ethanol is added, making it impossible to ascertain whether observed impacts are due to the presence of ethanol or the other resulting changes in the fuel.

[143] Karavalakis, G; Durbin, T; Yang, J; Roth, P., ''Impacts of Aromatics and Ethanol Content on Exhaust Emissions from Gasoline Direct Injection (GDI) Vehicles''. University of California, CE–CERT, April 2018.

[144] The EPAct study found T50 to have a meaningful and statistically significant impact on NMOG, NMHC, NO_X, and PM emissions. Consequently, the results of this study are likely confounded by changes in mid-point distillation, making it difficult to ascertain statistically significant impacts of the ethanol content changes and limiting the usefulness of the study.

suggests PM increase from E0 to E10 and then decrease from E10 to E15.

While there are limited data on Tier 3 vehicles, the results of the Tier 2 and Tier 3 vehicle studies cited above are nevertheless largely consistent with each other given that ethanol blending affects many other fuel properties, given that ethanol is blended into gasoline in various ways that affect the collateral property changes differently, and given the varying impacts from vehicle to vehicle. This makes it difficult to interpret trends across the body of literature without detailed information on multiple fuel properties. However, since the early 1990s, a number of programs have studied the effects of ethanol on emissions from earlier vintage vehicles, and based on these studies, emissions models have been published, including the Complex Model,[145] Predictive Model,[146] and MOVES simulator,[147] and the results from the more recent studies are also largely consistent with them given the vehicle to vehicle differences, uncontrolled variables, and statistical uncertainty. Namely, ethanol blending causes slight increases in NO_X emissions and slight decreases for CO emissions.

Earlier studies did not evaluate PM emission impacts from ethanol blending, so we are limited to consideration of only the more recent studies. The CRC E–94–3 and CE–CERT studies both tested ethanol splash blends in recent model year GDI vehicles, and one found an increase in PM with incremental ethanol (E0 to E10) while the other showed no significant impact (E10 to E15). Neither study controlled T50 between ethanol levels, but a notable difference between them was the range of T50 levels in the test fuels. The E10 test fuel in the CE–CERT study had lower T50 levels and additional ethanol blending depressed T50 significantly, more consistent with what we would expect in a median market fuel moving to E15, versus the higher T50s in the CRC study where E10 was the upper blend limit.[148] [149] Applying the findings of the EPAct study to the CE–CERT study suggests that the PM reduction from declining T50 in the low-aromatic CE–CERT E15 would have offset a small PM increase caused by ethanol's hindrance of droplet evaporation, as described elsewhere in the literature.[150] [151] In the case of the high-aromatics fuels in that study, the PM trend suggests this T50 benefit was not sufficient to fully overcome the droplet cooling effect. As a general conclusion, it seems reasonable to accept the CE–CERT study conclusion that moving from E10 to E15 in a T50, aromatics, and PM Index space representative of typical market fuels is not expected to produce a significant increase in tailpipe PM emissions from Tier 2 and 3 vehicles.

While some criteria pollutants would have relative increases (NO_X) and others have similar decreases (VOC and CO) while still others are less certain (PM) on E15 compared to E10, these changes are all relatively small. In the E15 CAA sec. 211(f)(4) partial waivers, we determined that effects of this magnitude were too small to cause or contribute to MY2001 and newer light-duty motor vehicles to exceed the vehicles' certified exhaust emissions standards and we expect that this would also be the case for Tier 3 vehicles. To put this into context, Table II.C–1 shows gram-per-mile exhaust emission standards (limits) for FTP-cycle certification of new light-duty motor vehicles under recent Federal regulatory programs. Vehicle manufacturers typically try to calibrate their products to have compliance margins of on the order of 50 percent when new to ensure they will meet emission requirements over their full useful lives, meaning their actual emission level is often about half the standard. The Tier 3 standards are still being phased in, but we expect compliance margins may be somewhat smaller as the lower emission levels such as Tier 3 Bin 30 are more challenging to meet. In any case, these margins are significantly larger than even the 10 percent PM effect estimated from the CRC E–94–3 study.

TABLE II.C–1—FTP-CYCLE EXHAUST EMISSION STANDARDS FOR RECENT LIGHT-DUTY PROGRAMS

Certification level/bin	NO_X (g/mi)	NMOG (g/mi)	CO (g/mi)	PM (mg/mi)
NLEV/TLEV	0.4	0.125	3.4	.....
Tier 2/Bin 5	0.05	0.075	3.4	10
Tier 3/Bin 30	0.030 NMOG + NO_X		3.4	3

While CAA sec. 211(f)(1) does not define the magnitude of acceptable emission impacts or other specific criteria for how to determine whether a fuel or fuel additive is substantially similar to certification fuel, we believe that the small changes in exhaust emissions compared to the certification levels for E15 relative to Tier 3 E10 certification fuel used in Tier 3 vehicles can be considered to be within the scope of what we have determined to be sub sim in our prior sub sim interpretive rulemakings. For example, if a Tier 3 vehicle were certified on E10 fuel with PM emissions of 2.0 mg/mi (33% compliance margin), a 10% PM increase due to fueling the vehicle with E15 would increase its PM emissions to 2.2 mg/mi. This is still significantly below its 3 mg/mi compliance limit (26% compliance margin).

Therefore, we believe that E15 is sub sim to Tier 3 E10 certification fuel from the perspective of exhaust emissions for Tier 3 light-duty motor vehicles.

[145] See ''Complex Model Used to Analyze RFG and Anti-dumping Emissions Performance Standards,'' available at *https://www.epa.gov/fuels-registration-reporting-and-compliance-help/complex-model-used-analyze-rfg-and-anti-dumping.*

[146] See ''California Gasoline Predictive Models, and CARBOB Model Development,'' available at *https://www.arb.ca.gov/fuels/gasoline/premodel/pmdevelop.htm.*

[147] See ''Moves and Other Mobile Source Emissions Models,'' available at: *https://www.epa.gov/moves.*

[148] ''Fuel Trends Report: Gasoline 2006–2016.'' US EPA Office of Transportation and Air Quality, Washington, DC. EPA420–R–17–005. October, 2017. See Section 6.C.f. on E200 data, which can be converted to T50.

[149] ''Determination of the Potential Property Ranges of Mid-Level Ethanol Blends.'' American Petroleum Institute, Washington, DC. April 2010. See Figure 7.

[150] Butler, A., Sobotowski, R., Hoffman, G., and Machiele, P., ''Influence of Fuel PM Index and Ethanol Content on Particulate Emissions from Light-Duty Gasoline Vehicles,'' SAE Technical Paper 2015–01–1072, 2015.

[151] Burke, S., Rhoads, R., Ratcliff, M., McCormick, R. et al., ''Measured and Predicted Vapor Liquid Equilibrium of Ethanol-Gasoline Fuels with Insight on the Influence of Azeotrope Interactions on Aromatic Species Enrichment and Particulate Matter Formation in Spark Ignition Engines,'' SAE Technical Paper 2018–01–0361, 2018.

b. Evaporative Emissions

EPA has set evaporative emission standards for motor vehicles since 1971. During the ensuing years, these evaporative standards have continued to evolve, resulting in additional evaporative emissions reductions. Consideration of whether E15 is substantially similar to Tier 3 E10 certification fuel for evaporative emissions requires consideration of the applicable evaporative emissions standards to which the particular motor vehicles were certified, in this case Tier 3 motor vehicles. There are now six main components to motor vehicle evaporative emissions that are important for our standards: (1) Diurnal (evaporative emissions that come off the fuel system as a motor vehicle heats up during the course of the day); (2) refueling emissions (evaporative emissions that come off the fuel system as the vehicle is refueled); (3) hot soak (evaporative emissions that come off a hot motor vehicle as it cools down after the engine is shut off); (4) running loss (evaporative emissions that come off the fuel system during motor vehicle operation); (5) permeation (evaporative emissions that come through the walls of elastomers in the fuel system and are measured as part of the diurnal test); and (6) unintended leaks due to deterioration/damage that is now largely monitored through onboard diagnostic systems.

For hot soak, permeation, and unintended leak evaporative emissions, we expect that E15 would have a similar effect as Tier 3 E10 certification fuel. In the E15 partial waivers, we stated that we did not expect that E15 would have an effect on hot soak, permeation, and unintended leak evaporative emissions based on a review of the data and on the fact that auto manufacturers have been required to age vehicles on E10 for evaporative emissions durability testing since MY2004. We are not aware of any information suggesting that Tier 3 vehicles would behave differently since they are aged for evaporative emissions durability on E15 and certified on Tier 3 E10 certification fuel. Furthermore, in our review of the testing of permeation on pre-Tier 3 vehicles (*i.e.,* prior to changes made to address permeation) in the E15 partial waiver decisions, while ethanol was shown to significantly worsen permeation emissions, the effect appears to be fully reached at E10, as there was no discernable worsening of the impacts at higher ethanol concentrations.[152] Vehicle manufacturers have now redesigned their fuel systems to control permeation on E10 sufficiently to meet the Tier 3 evaporative emission standards. Consequently, we do not anticipate permeation emissions with E15 to be any higher than with E10.

Refueling, diurnal, and running loss evaporative emissions are mostly a function of volatility of the fuel. As discussed in Section II.C.4, to determine whether a fuel is sub sim to Tier 3 E10 certification fuel, it is necessary to evaluate the volatility of the fuel relative to Tier 3 E10 certification fuel. This is because the volatility plays a significant role in these evaporative emission sources independent of the level of ethanol concentration in the fuel. For this sub sim determination, we are evaluating whether E15 at 9.0 psi is sub sim to Tier 3 E10 certification fuel at 9.0 psi. In general, if two fuels have the same RVP, the expected refueling, diurnal, and running loss evaporative emissions from the two fuels would be similar regardless of the ethanol content. In this situation, since there is no difference in RVP, E15 at 9.0 psi RVP would be expected to have essentially identical evaporative emissions to E10 at 9.0 psi RVP from refueling, diurnal, and running loss emissions sources. We find that E15 at 9.0 psi RVP is sub sim to Tier 3 E10 certification fuel at 9.0 psi RVP for Tier 3 light-duty motor vehicles.

c. Materials Compatibility

Materials compatibility is a key factor in considering what fuels or fuel additives are sub sim to certification fuel, insofar as poor materials compatibility can lead to serious exhaust and evaporative emission compliance problems not only immediately upon use, but especially over the full useful life of vehicles and engines. In the E15 partial waivers, we determined that the use of E15 in MY2001 and newer light-duty motor vehicles ''will not [result in] materials compatibility issues that lead to exhaust or evaporative emissions exceedances.'' [153] We explained that ''[n]ewer motor vehicles, such as Tier 2 and NLEV vehicles (MY2001 and newer), on the other hand, were designed to encounter more regular ethanol exposure compared to earlier model year motor vehicles'' since EPA's in-use verification program would require auto manufacturers to place more ''emphasis on real world motor vehicle testing'' prompting manufacturers to consider commercially available fuels containing ethanol when developing and testing their emissions systems.[154] Based on this assessment, in addition to confirmatory data from DOE's extensive test program that aged MY2001 and newer motor vehicles up to 120,000 miles on E15, we concluded that MY2001 and newer motor vehicles would not have materials compatibility issues with E15.

Since granting the E15 partial waivers, E15 is now used as an aging fuel for service accumulation for evaporative durability testing.[155] Auto manufacturers have used E15 for service accumulation for evaporative durability testing since at least MY2014. This means that many Tier 2 vehicles since MY2014 and all Tier 3 vehicles have been aged on E15 and have been designed with materials capable of handling E15 for extended periods of time. As such, we expect that Tier 3 vehicles would have similar, if not better, materials compatibility with E15 compared to MY2001 and newer motor vehicles since Tier 3 vehicles since manufacturers are required to use E15 as an aging fuel for evaporative durability testing and therefore design these motor vehicles to encounter E15 in-use.

Therefore, we would not expect any materials compatibility issues from E15 in Tier 3 vehicles and we find that E15 would have substantially similar materials compatibility effects as Tier 3 E10 certification fuel.

d. Driveability

A change in the driveability of a motor vehicle that results in significant deviation from normal operation (*e.g.,* stalling, hesitation, etc.) would result in increased emissions. These increases may not be demonstrated in the emission certification test cycles but instead are present during in-use operation. In addition to consumer dissatisfaction, a motor vehicle stall and subsequent restart can result in significant increases in emissions because emission rates are typically highest during vehicle starts, especially cold starts. Further, concerns exist if the consumer or operator tampers with the motor vehicle in an attempt to correct the driveability issue since consumers may attempt to modify a motor vehicle from its original certified configuration. Thus, in defining substantially similar we have considered whether fuels or fuel additives have an adverse effect on driveability relative to certification fuel.

We concluded in the E15 partial waivers that we did not believe that E15 would cause driveability concerns for

[152] See 75 FR 68115–68120 (November 4, 2010) and 76 FR 4675–4681 (January 26, 2011).

[153] See 75 FR 68122–68123 (November 4, 2010); 76 FR 4681 (January 26, 2011).

[154] See 75 FR 68122 (November 4, 2010).

[155] See 40 CFR 86.1824–08(f)(1).

MY2001 and newer motor vehicles. We reviewed the data and information from the over 30 different test programs evaluated to grant the E15 partial waivers and we found ''no specific reports of driveability, operability or on-board diagnostics (OBD) issues across many different vehicles and duty cycles including lab testing and in-use operation.'' [156]

After granting the partial E15 waivers, we believe that late model Tier 2 and Tier 3 vehicles also have better capability of operating on E15, since as mentioned above, auto manufacturers have been required to use E15 as an aging fuel for evaporative durability aging since at least MY2014.

We also believe that the producers and distributors of gasoline adhere to ASTM specifications for gasoline (*i.e.,* ASTM D4814),[157] which helps address the driveability of gasoline that contains up to 15 volume percent ethanol. As E15 has been in the market since at least 2012, industry, through ASTM International, has worked to develop voluntary consensus-based standards to help ensure the quality of E15 made and used in the marketplace. For example, ASTM D4814–18c includes language to ensure that gasoline-ethanol blends have certain physical and chemical characteristics, such as distillation parameters falling within specified ranges, to ensure that when the gasoline-ethanol blended fuel is used, driveability issues will not arise.[158]

For these reasons, we find that E15 would have similar driveability characteristics to Tier 3 E10 certification fuel for Tier 3 light-duty motor vehicles.

e. Conclusion

For reasons described above, we find that E15 is substantially similar to Tier 3 E10 certification fuel when E15 is used in Tier 3 vehicles (*i.e.,* MY2020 and newer light-duty motor vehicles). As discussed above, when interpreting which fuels and fuel additives are sub sum to certification fuel under CAA sec. 211(f)(1), we consider the potential effects that a new fuel or fuel additive may have on a motor vehicle's emissions (exhaust and evaporative), materials compatibility, and driveability. Regarding emissions, we expect that E15 would exhibit similar exhaust and evaporative emissions for Tier 3 vehicles certified on Tier 3 E10 certification fuel. For materials compatibility and driveability, we find E15 is sub sim since E15 is being used as a service accumulation fuel for evaporative emissions aging and for the reasons described in the E15 partial waivers regarding materials compatibility and driveability for MY2001 and newer light-duty motor vehicles. For all the reasons described above, we find E15 is sub sim to Tier 3 E10 certification fuel for Tier 3 light-duty motor vehicles.

7. Technical Rationale for MY2001–2019 Light-Duty Motor Vehicles

We find that E15 is sub sim to Tier 3 E10 certification fuel in MY2001–2019 light-duty motor vehicles. As discussed in Section II.C.4, it is necessary to consider how E15 would perform relative to Tier 3 E10 certification fuel in each class of vehicles, engines, and equipment. In the E15 partial waivers, we considered the relative effects of E15 to E10 when used in these vehicles as a basis to determine that MY2001–2019 light-duty motor vehicles will not experience issues with materials compatibility and driveability.[159] Additionally, as described above in the analysis for Tier 3 vehicles, much of the emissions testing to date to evaluate the effects of E15 has been conducted on vehicles representative of MY2001–2019 light-duty vehicles. Based on this existing data and our prior engineering judgment expressed in the E15 partial waivers, we have concluded that E15, with its additional oxygen content and identical RVP relative to Tier 3 E10 certification fuel, would have effects on emissions, materials compatibility, and drivability substantially similar to E10 in MY2001–2019 light-duty motor vehicles.

a. Exhaust Emissions

In the E15 partial waivers, we argued that auto manufacturers developed vehicles around MY2001 to accommodate in-use exposure to E10, and that this accommodation would result in similar performance of emissions, materials compatibility, and driveability on E15.[160] We also pointed to the large compliance margins in certified exhaust emissions for NLEV and Tier 2 vehicles (collectively MY2001–2019 vehicles) in the E15 waiver decisions.[161] We contextualized the relatively small changes in emissions as a small fraction of the compliance margin and argued that these small changes would not cause MY2001–2019 motor vehicles to exceed their emissions standards.[162] We continue to believe that our engineering analysis presented in the E15 waivers is appropriate, and that MY2001–2019 motor vehicles will have substantially similar exhaust emissions on E15 when compared to Tier 3 E10 certification fuel.

As we stated in the first E15 partial waiver, ''the largest improvements to emission controls and hardware durability came after 2000 with the introduction of several new emission standards and durability requirements forcing manufacturers to better account for the implications of in use fuels on the evaporative and exhaust emission control systems.'' [163] Overall, the transition from Tier 1 (generally pre-MY2000 and older vehicles) to NLEV (generally MY2001–2003) and then to Tier 2 (generally MY2004–2019) exhaust standards called for design changes that all moved in the same direction of increased control of exhaust emissions through increasingly sophisticated emissions control systems aimed at reducing the level of emissions created by the combustion of the fuel in the engine combined with increased control of these emissions by the catalyst system. This increasing sophistication was based on better air fuel ratio control, and increased efficiency, durability and faster light-off of the catalyst. While Tier 2 standards called for the most sophisticated engine and catalyst system designs at the time, the NLEV standards prompted major redesign efforts by manufacturers that were later expanded and advanced even further to meet, and earn credits towards compliance with, Tier 2 standards. From an engineering perspective, the emissions control systems of pre-Tier 2, NLEV vehicles are significantly more robust than those used in MY2000 and older motor vehicles and more like those of Tier 2 motor vehicles in terms of the degree of sophistication of engine controls and catalyst technology. In the second E15 waiver decision, we reviewed the available emission control technologies of NLEV vehicles to determine that they had adapted most of the control strategies that were employed in Tier 2 vehicles.[164] These control strategies involved controlling for oxygen content of fuels to largely reduce the risks associated with gasoline-ethanol blended fuel use.

[156] See 76 FR 4681–82 (January 26, 2011).

[157] ASTM Standard D4814, 2019, ''Standard Specification for Automotive Spark-Ignition Engine Fuel,'' ASTM International, West Conshohocken, PA, 2003, DOI: 10.1520/C0033–03, *https://www.astm.org.*

[158] Id.

[159] See 75 FR 68124 (November 4, 2010) and 76 FR 4681–4682 (January 26, 2011).

[160] See 75 FR 68125–68126 (November 4, 2010) and 76 FR 4667 (January 26, 2011).

[161] See 75 FR 68111 (November 4, 2010) and 76 FR 4669 (January 26, 2011).

[162] Id.

[163] See 75 FR 68125 (November 4, 2010).

[164] See 76 FR 4669 (January 26, 2011).

Furthermore, we highlighted that another important regulatory change for improving the exhaust emissions control durability of MY2001–2006 light-duty motor vehicles was the Compliance Assurance Program (''CAP2000''), which took effect by MY2000 for light-duty motor vehicles. CAP2000 placed more emphasis on in-use performance of vehicle emission controls, including the potential impacts of operation from different available in-use fuels. In particular, the In-use Verification Program (IUVP) introduced under CAP2000 requires manufacturers to perform exhaust and evaporative emissions tests on customer vehicles in the in-use fleet to confirm the durability projections that manufacturers make at certification. These motor vehicles would now be exposed to gasoline-ethanol blends in use.

Another consideration in our engineering analysis in the second E15 waiver decision was the extent to which MY2001–2006 light-duty motor vehicles emit at levels below the applicable standards and therefore have a compliance margin. Compliance margins are generally designed into motor vehicles by manufacturers to account for possible variations in production vehicles and changes to vehicle emissions control systems from actual field usage, such as how the vehicle is typically operated and the type of fuel used. The larger the compliance margin, the more likely it is that vehicles would accommodate any emissions increases from fueling with E15 and continue to meet emission standards in-use. In the second E15 waiver decision, we surveyed the certification data for MY2001–2006 motor vehicles and the results showed that the average full useful life compliance margin (which accounts for in-use deterioration) for the entire MY2001– 2006 light-duty motor vehicle fleet was approximately 66 percent.[165] We also reviewed in-use data from the IUVP program, which indicated that motor vehicles actually achieved a similar compliance margin when operated in real-world conditions.[166] The size of the compliance margins for MY2001–2006 light-duty motor vehicles suggests manufacturers were in fact designing and building motor vehicles that were significantly cleaner than required as part of a planned migration to technologies capable of meeting the tighter Tier 2 standards.

We relied on the available literature, primarily the data collected from the DOE catalyst study, to confirm our engineering analysis of the emissions behavior of NLEV and Tier 2 vehicles. These data showed that E15 would not cause NLEV or Tier 2 vehicles to exceed their emissions standards both in the short- and long-term. Furthermore, most of the data discussed in Sections II.C.6.a and II.F were based on tests conducted on MY2001–2019 motor vehicles and we believe that the estimated emissions changes from using E15 relative to Tier 3 E10 certification fuel or E10 market fuel in MY2001–2019 are representative of vehicle technologies classes in this time period (*i.e.,* NLEV, Tier 2, and early Tier 3 vehicles).

Because of the extensive analysis in the E15 waiver decisions and the large compliance margins in the MY2001–2019 light-duty motor vehicle fleet, we find that E15 is sub sim to Tier 3 E10 certification fuel when used in those vehicles.

b. Evaporative Emissions

As mentioned in Section II.C.6.b, we evaluate evaporative emissions in terms of six sources of evaporative emissions: (1) Diurnal emissions, (2) refueling emissions, (3) hot soak, (4) running loss, (5) permeation, and (6) emissions from unintended leaks. In the E15 waiver decisions,[167] we explained that as with exhaust emissions, emission control improvements adopted in response to applicable regulatory requirements are important to the consideration of the potential impact of a fuel or fuel additive on evaporative emissions. A number of regulatory actions occurred by MY2001 that placed an emphasis on the control of evaporative emissions and on real-world testing of motor vehicles, which in turn led to changes in evaporative emission control systems. These regulatory changes, together with test data reviewed in the E15 waivers,[168] support the conclusion that MY2001–2019 light-duty motor vehicles operated on E15 at 9 psi RVP would have similar evaporative emissions if those vehicles were operated on Tier 3 E10 certification fuel.

As mentioned in Section II.C.6.b, we evaluated the effects E15 would have relative to E10 for hot soak, permeation, and unintended leak evaporative emissions in MY2001–2019 motor vehicles in the E15 waivers. We found that motor vehicles designed and aged on E10 for evaporative emissions durability would have similar hot soak, permeation, and unintended leak evaporative emissions if operated on E15. As explained in the first E15 partial waiver, since these elements are largely a function of the materials used to design the evaporative emission controls, if an auto manufacturer designed a system to encounter a gasoline-ethanol blended fuel in-use, it is likely that the vehicle's evaporative emissions control would handle E10 and E15 similarly. Therefore, we find that E15 is sub sim to Tier 3 E10 certification fuel for hot soak, permeation, and unintended leak evaporative emissions for MY2001–2019 motor vehicles.

Also, as mentioned in Section II.C.6.b, diurnal, refueling, and running loss emissions are mostly a function of the volatility of the gasoline used. If two fuels had the same volatility, we would expect the same or similar diurnal, refueling, and running loss emissions. As we are only considering whether E15 at 9.0 psi RVP is sub sim to Tier 3 E10 certification fuel with 9.0 psi RVP we can conclude that E15 at 9.0 psi RVP is sub sim to Tier 3 E10 certification fuel in MY2001–2019 light-duty motor vehicles. We base this finding on the fact that E15 at 9.0 psi would have the same volatility as Tier 3 E10 certification fuel.

c. Materials Compatibility

We find that E15 at 9 psi RVP is substantially similar to Tier 3 E10 certification fuel when used in MY2001–2019 light-duty motor vehicles as it relates to materials compatibility. Materials compatibility is a factor in considering whether a fuel is sub sim since poor materials compatibility can lead to serious exhaust and evaporative emissions compliance problems not only immediately upon using the new fuel or fuel additive, but especially over time.

Similar to Tier 3 vehicles, pre-Tier 2 and Tier 2 vehicles (MY2004–2019) were aged with E10 for evaporative durability beginning with MY2004. Due to this long-term exposure of E10, we explained in the first E15 waiver decision that these motor vehicles would not have materials compatibility issues. For NLEV vehicles, in the second E15 waiver decision, we argued that ''the CAP2000 in-use testing and durability demonstration requirements as well as the introduction of OBD leak detection monitors and enhanced evaporative emission test procedures have led manufacturers to design vehicles using materials that will continue to function properly with respect to evaporative emissions when

[165] See 76 FR 4669 (January 26, 2011).

[166] See 75 FR 68111–68112 (November 4, 2010) and 76 FR 4669 (January 26, 2011).

[167] See 75 FR 68112–68113 (November 4, 2010) and 76 FR 4673–4674 (January 26, 2011).

[168] See 75 FR 68120 (November 4, 2010) and 76 FR 4663–4664 (January 26, 2011).

gasoline-ethanol blends are used.'' [169] This includes materials compatible with long-term use of gasoline-ethanol blends, as the standards apply for the useful life of the vehicle, and the IUVP test program and the OBD leak detection requirement monitor compliance throughout the useful life. We noted in the second E15 waiver decision that data from IUVP, EPA's in-use surveillance program, and manufacturer emission defect information reports had not detected any failures attributable to ethanol up to E10 in these vehicles.[170]

Based on our engineering judgment discussed in the E15 waiver decisions, we expect that there will not be materials compatibility issues with E15 in MY2001–2019 light-duty motor vehicles. Therefore, we conclude that E15 at 9.0 RVP is sub sim to Tier 3 E10 certification fuel in MY2001–2019 light-duty motor vehicles.

d. Driveability

We find that E15 at 9.0 psi RVP is substantially similar to Tier 3 E10 certification fuel when used in MY2001–2019 light-duty motor vehicles as it relates to driveability. As mentioned in Section II.C.7.a and described in the E15 partial waivers, auto manufacturers developed light-duty motor vehicles to use gasoline-ethanol blends that were becoming more prevalent in the marketplace by MY2001. This was tied to the implementation of new vehicles emission standards that focused on in-use performance in fuels; namely, the CAP 2000 program and NLEV for exhaust emissions, and the enhanced evaporative emission standards.[171] Additionally, as auto manufacturers began complying with the Tier 2 standards (beginning with MY2004), auto manufacturers were required to use E10 as an aging fuel for evaporative emission durability testing.[172] Due to this focus on in-use performance for MY2001 and newer light-duty motor vehicles, which were designed to run on E10 in use, we believe E15 would affect driveability similarly to Tier 3 E10 certification fuel used in these vehicles.

We evaluated driveability of MY2001–2019 vehicles extensively in the E15 partial waivers. In the first E15 partial waiver, we found that ''[t]here is no evidence from any of the test programs cited by Growth Energy or in the data from the DOE Catalyst Study of driveability issues for Tier 2 motor vehicles fueled with E15 that would indicate that use of E15 would lead to increased emissions or that might cause motor vehicle owners to want to tamper with the emission control system of their motor vehicle.'' [173] In the second E15 partial waiver, we found that ''[t]he Agency's review of the data and information from the different test programs finds no specific reports of driveability, operability or OBD issues across many different vehicles and duty cycles including lab testing and in-use operation [in MY2001–2006 light-duty motor vehicles].'' [174]

Based on both our engineering rationale that MY2001 and newer light-duty motor vehicles were designed by auto manufacturers to operate on gasoline-ethanol blends and our thorough review of the available literature in the E15 partial waivers, which showed no driveability, operability or OBD issues across over 30 reviewed studies on E15 covering MY2001 and newer vehicles, we find that E15 at 9.0 psi RVP is substantially similar to Tier 3 E10 certification fuel when used in MY2001–2019 light-duty motor vehicles as it relates to driveability.

e. Conclusion

We find that E15 at 9.0 psi RVP is sub sim to Tier 3 E10 certification fuel when used in MY2001–2019 vehicles. In conjunction with our finding that E15 at 9.0 psi RVP is sub sim to Tier 3 E10 certification fuel when used in MY2020 and newer light-duty motor vehicles (*i.e.,* Tier 3 certified light-duty vehicles) as discussed in Section II.C.6, these findings collectively mean that we find that E15 at 9.0 psi RVP is sub sim to Tier 3 E10 certification fuel when used in MY2001 and newer light-duty vehicles.

8. Technical Rationale for Other Vehicles, Engines, and Equipment

We conducted an analysis of whether E15 is substantially similar to E10 certification fuel for MY2000 and older light-duty motor vehicles, heavy-duty gasoline-fueled motor vehicles, and nonroad vehicles, engines, and equipment. For the reasons explained below, we conclude that E15 is not sub sim to E10 certification fuel for these types of vehicles and engines.

a. MY2000 and Older Light-Duty Motor Vehicles

We conclude that E15 would not be substantially similar to Tier 3 E10 certification fuel used in MY2000 and older light-duty motor vehicles. As we argued in the first E15 partial waiver decision and in the MMR, MY2000 and older light-duty motor vehicles were generally not designed to operate on gasoline-ethanol blended fuels.[175] We determined that E15 in these vehicles could lead to increases in emissions that result in vehicles exceeding certified emission standards and issues with materials compatibility as auto manufacturers likely did not use components compatible with ethanol in fuel systems.

MY2000 and older light-duty motor vehicles have much less sophisticated emissions control systems compared to more modern vehicles and, may experience conditions that lead to immediate emission increases and may exceed their emission standards if operated on E15. Vehicles produced prior to the mid-1980s were equipped primarily with carbureted engines. The air/fuel (A/F)ratio of the carburetor is preset at the factory based on the expected operating conditions of the engine such as ambient temperature, atmospheric pressure, speed, and load. As a result, carburetors have ''open loop'' fuel control, which means that the air and fuel are provided at a specified, predetermined ratio that is not automatically adjusted during vehicle operation. As fuel composition can vary, an engine with a carburetor and open loop fuel control would never detect whether the desired A/F ratio was achieved. Since the vehicles produced prior to the mid-1980s operated ''open loop'' all of the time with no ability to react to changes in the A/F ratio, the addition of ethanol to the fuel tended to make the A/F ratio leaner, typically resulting in an immediate emission impact of reducing HC and CO emissions, but increasing NO_X emissions. However, some of these older open loop systems already operate at the lean edge of combustion on current commercial fuels so an increase in ethanol may cause them to begin to misfire resulting in HC and CO increases. Concerning long-term exhaust emissions, in the first E15 waiver, we concluded that for MY2000 and older light-duty motor vehicles, enleanment [176] resulting in higher exhaust temperatures could cause accelerated catalyst deterioration which

[169] See 76 FR 4681 (January 26, 2011).

[170] See 76 FR 4681 (January 26, 2011).

[171] See 75 FR 68104 (November 4, 2010) and 76 FR 4680 (January 26, 2011).

[172] See 40 CFR 86.113–04.

[173] See 75 FR 68097 (November 4, 2010).

[174] See 76 FR 4681–4682 (January 26, 2011).

[175] See 75 FR 68125–68126 (November 4, 2010) and 76 FR 44412 (July 25, 2011).

[176] Enleanment refers to increasing the amount of oxygen in the mixture of air and fuel that enters the engine for combustion. At any one air to fuel ratio, adding ethanol to the fuel adds additional oxygen to the mixture of air and fuel, tending to enlean the mixture.

would result in higher emissions long-term.[177]

Concerning materials compatibility, in the first E15 partial waiver we found that ''a number of pre-Tier 2 motor vehicles, including Tier 0 motor vehicles (from the 1980s to 1995) and Tier 1 motor vehicles (from 1996 to 2001), may have been designed for only limited exposure to E10 and consequently may have the potential for increased material degradation with the use of E15 even though they are beyond their useful life requirements.'' [178] We argued further that degredation of fuel systems and emission controls from compatibility issues could result in higher emissions and emission control failure due to corrosion.

Due to the potential increases in vehicles emissions and issues with materials combability, we prohibited MY2000 and older light-duty motor vehicles from using E15.[179] We continue to believe that MY2000 and older light-duty motor vehicles were not designed to operate on E15 gasoline-ethanol blends and that E15 would not be sub sim to Tier 3 E10 certification fuel in those vehicles. As we found in the first E15 waiver decision, we believe that going from E10 to E15 in these vehicles could damage the emission controls and lead to increased emissions. Therefore, we conclude that E15 is not sub sim to Tier 3 E10 certification fuel in MY2000 and older light-duty motor vehicles.

b. Heavy-Duty Gasoline-Fueled Motor Vehicles

As discussed in the first E15 waiver decision and the MMR, we have concerns for E15 use in heavy-duty gasoline-fueled motor vehicles that are similar to our concerns regarding E15 use MY2000 and older vehicles.[180] We believe that heavy-duty gasoline-fueled motor vehicles have historically lagged in adoption of adaptive fuel controls similar to MY2000 and older vehicles, and we have no new information to cause us to reconsider E15 use in these vehicles. For all of the reasons discussed in Section II.C.8.a, we find that E15 is not sub sim to Tier 3 E10 certification fuel for heavy-duty gasoline fueled motor vehicles.

c. Nonroad Vehicles, Engines, and Equipment (Including Motorcycles and Marine Engines)

Due to the potential effects on emissions and materials compatibility, we cannot determine that E15 is sub sim to Tier 3 E10 certification fuel when used in nonroad products, motorcycles, or marine engines. The sub sim definition in this action for E15 restricts the applicability of the sub sim definition from applying to nonroad vehicles, engines, and equipment (''nonroad products''), highway and off-highway motorcycles (collectively called ''motorcycles''), and marine engines. As discussed in Section II.C.9, we believe it appropriate to limit the applicability of a sub sim definition to those vehicles, engines, and equipment for which EPA is able to determine that the fuel or fuel additive is suitable for use.

In the first E15 partial waiver, we denied the E15 waiver request for all nonroad vehicles, engines, and equipment (''nonroad products''). As described in detail in the first E15 partial waiver, nonroad products typically have less complex engine designs, fuel systems, and controls than light-duty motor vehicles.[181] We also expressed concerns with the use of E15 in nonroad products, particularly with respect to long-term exhaust and evaporative emissions and materials compatibility.[182] The limited information available in the public domain at the time of the first E15 waiver decision, supported our decision to not grant the E15 waiver request for nonroad products.[183] Additionally, we used our engineering rationale and the data evaluated from the first E15 waiver decision to prohibit the use of E15 in nonroad products under CAA sec. 211(c) in the MMR.[184]

We have similar concerns with E15 use in motorcycles and marine engines as these vehicles and engines have similar emission controls to other classes of nonroad products. These concerns were the basis for the denial of the E15 waiver request for all motorcycles and marine engines and extending the prohibition on E15 use in motorcycles and marine engines.

Since the E15 waivers and the MMR, little has changed with respect to ability of nonroad products to utilize E15. They continue to be certified on E0 and designed to run on gasoline-ethanol blends only up to E10. As highlighted in their public comments, the manufacturers of such engines continue to press for the need for greater outreach, education, and misfueling mitigation efforts beyond those already in place to protect their customers from E15, and the marine manufacturers have been actively testing isobutanol in concert with butanol coalition members to gain approval for its use in lieu of ethanol entirely due to their ongoing concerns with the use of ethanol at all in the marine environment. For these reasons, the sub sim determination in this action excludes from its scope these vehicles, engines, and equipment. This exclusion in conjunction with the prohibition on E15 use in these products promulgated under CAA sec. 211(c) in the MMR will continue to preclude the use of E15 in these products.

9. Limitations of ''Substantially Similar'' Interpretative Rulemaking

CAA sec. 211(f)(1)(B) prohibits fuel or fuel additive manufacturers from first introducing into commerce, or increasing the concentration in use of, any fuel or fuel additive for use by any person in motor vehicles which is not substantially similar to any fuel or fuel additive utilized in the certification of motor vehicles or engines under CAA sec. 206. As explained above, we have interpreted the ''substantially similar'' provision several times to allow the introduction into commerce of certain fuel blends. The language of CAA sec. 211(f)(1) does not address whether and how EPA can restrict its determination that a particular fuel is ''substantially similar'' to a certification fuel. Given the fact that there have now been multiple certification fuels since 1977, when CAA sec. 211(f)(1) was first enacted, we believe it is reasonable to interpret this provision as allowing EPA to make a sub sim determination with respect to the use of the new fuel within certain parameters, where the parameters are intended to avoid the kinds of problems that prompted Congress to enact the general prohibition against introduction into commerce of fuels that are neither substantially similar nor have a CAA sec. 211(f)(4) waiver. Additionally, as discussed in Sections II.C.6–8, despite being sub sim for certain light-duty vehicles, E15 is inappropriate for use in vehicles, engines, and equipment other than MY2001 and newer light-duty vehicles. Therefore, without the sub sim determination being limited to the parameters described in this section, there would be no basis for a conclusion that E15 is ''substantially similar'' to Tier 3 certification fuel.

Congress did not speak directly to the question of whether CAA sec. 211(f)(1) provides EPA with authority to make a sub sim determination that is subject to appropriate parameters, and we believe that a sub sim determination within reasonable parameters intended to

[177] See 75 FR 68128 (November 4, 2010).

[178] See 75 FR 68129 (November 4, 2010).

[179] See 76 FR 44448 (July 25, 2011).

[180] See 75 FR 68138 (November 4, 2010) and 76 FR 44409 (July 25, 2011).

[181] See 75 FR 68098 (November 4, 2010).

[182] See 75 FR 68134–68137 (November 4, 2010).

[183] See 75 FR 68137 (November 4, 2010).

[184] See 76 FR 44448 (July 25, 2011).

ensure that the fuel at issue is in fact ''substantially similar'' to the relevant certification fuel is appropriate. Here, where EPA's sub sim determination for E15 is based on a determination that E15 is substantially similar to a certification fuel that is used to certify only a subset of the vehicle fleet, and the Agency has already determined that E15 cannot be used in certain vehicles and engines, it is necessary for EPA's sub sim determination to acknowledge certain parameters in order to ensure that the purpose of CAA sec. 211(f)(1) is maintained. As explained in Section II.A.1, the intent behind the enactment of CAA sec. 211(f)(1) was to prevent of the use of any new or recently introduced additive to unleaded gasoline that could impair the emission performance of vehicles [185]—as explained above, this is the same rationale underpinning the parameters within which we make this final sub sim determination. Congress recognized that the analysis required to control or prohibit the manufacture or introduction into commerce of a fuel or fuel additive under CAA sec. 211(c) may be a lengthy process.[186]

Given this context and the legislative history leading to the enactment of CAA sec. 211(f)(1), the parameters within which we make our sub sim determination today represent a reasonable exercise of our CAA sec. 211(f)(1) authority.

As discussed below, in this action we are establishing criteria on our E15 sub sim finding consistent with the rationale underpinning the enactment of CAA sec. 211(f)(1), and our prior interpretation of our authority to make a sub sim finding within certain parameters under CAA sec. 211(f)(1) or to place certain conditions on a CAA sec. 211(f)(4) waiver from sub sim. Given the direct impact on emissions and the indirect impact on emission through impacts on materials compatibility, and driveability, the parameters within which we are making our E15 sub sim finding address these three areas.

One implication of a sub sim interpretation that includes E15 under CAA sec. 211(f)(1) would be that a waiver under CAA sec. 211(f)(4) will no longer be necessary for E15 to be introduced into commerce. This would in effect remove the conditions of the E15 partial waivers imposed on fuel and fuel additive manufacturers, in the absence of any limitations on the sub sim interpretation. This would mean that the conditions in the E15 partial waivers designed to limit the introduction into commerce of E15 to only MY2001 and newer light-duty motor vehicles would not apply. We have already promulgated parallel restrictions in our regulations in the E15 MMR rulemaking at 40 CFR part 80, subpart N.[187] However, some conditions in the E15 partial waivers are not part of the MMR. One such condition is the requirement that fuel and fuel additive manufacturers have an EPA-approved misfueling mitigation plan (MMP) prior to introducing E15 into commerce.

While MMPs generally commit fuel and fuel additive manufacturers to adhere to regulatory requirements of the MMR, MMPs also commit these manufacturers to participate in public outreach on the appropriate use of E15 and allow for specific, additional misfueling mitigation measures that may apply in a manufacturer's specific situation. We believe that the continued existence of MMPs is important when finding that E15 is sub sim. The MMPs help prevent the use of E15 in MY2000 and older motor vehicles, nonroad vehicles, engines, and equipment (including motorcycles, and heavy-duty motor vehicles). Without the MMPs, there is an increased risk of misfueling which would directly impact the effects of the E15 on emissions, materials compatibility and drivability in MY2000 and older motor vehicles and nonroad, heavy-duty, and motorcycle vehicles and engines. We denied the E15 waiver request for MY2000 and older motor vehicles, nonroad vehicles, engines, and equipment (including motorcycles, and heavy-duty motor vehicles) due to our engineering assessment that these vehicles, engines, and equipment may experience emissions failures over these vehicles, engines, and equipments' full useful lives.

Also, as discussed above, in the MMR we concluded that under CAA sec. 211(c)(1)(A), the likely result would be increased VOC, CO, and NO_X emissions were these particular engines, vehicles, and equipment to use E15. The prohibitions and regulatory requirements were designed to help mitigate the misfueling of E15 in these vehicles. There are still millions of MY2000 and older motor vehicles on the road (although they will over time make a smaller contribution to vehicle miles travelled) and hundreds of millions of pieces of nonroad equipment not designed for and prohibited from E15 use. The existing conditions on the E15 partial waivers under CAA sec. 211(f)(4) help ensure E15 fuel quality and mitigate the misfueling of vehicles, engines, and equipment and we believe it is appropriate to continue to limit our sub sim determination to a determination that E15 is sub sim to Tier 3 E10 certification fuel only under parameters that reflect the existing conditions on the E15 partial waivers.

We also sought comment on whether this proposed sub sim interpretation for E15 should be limited to the subset of the national vehicle and engine fleet to which the current E15 waivers apply (MY2001 and newer light-duty motor vehicles) or on which our assessment in Section II.C.5 of the NPRM is based (*i.e.,* only to vehicles and engines certified using Tier 3 E10 certification fuel). After considering these comments, we find it appropriate to limit the applicability of our substantially similar determination in this case to certain classes of vehicles, engines, and equipment. The record has not changed with respect to the inability of older vehicles, nonroad equipment, motorcycles, or heavy-duty trucks to use E15, which formed the basis of our denial of the E15 waiver request for such vehicles, engines, and equipment. Furthermore, our assessment in Section II.C.5 of the NPRM found that the use of E15 in MY2000 or older light-duty gasoline motor vehicle, any heavy-duty gasoline motor vehicle or engine, any highway or off-highway motorcycle, or any gasoline-powered nonroad engines, vehicles or equipment is not substantially similar to Tier 3 E10 certification fuel. Such a limitation would be in recognition of the fact that, in contrast to the state of affairs at the time when CAA sec. 211(f)(1) was enacted, not all gasoline vehicles and equipment are certified on the same gasoline. All other vehicles, engines, and equipment prior to Tier 3 used certification fuel without ethanol, and some nonroad vehicles, engines, and equipment are still certified using E0. Another condition in the E15 partial waivers is that ethanol producers must manufacture denatured fuel ethanol that meets industry established quality standards if used to make E15. This requirement is not currently part of EPA's fuels regulations. For the new definition of sub sim for E15 in this action, we are updating criteria that establishes the physical and chemical parameters for the new definition of sub sim. We are making these changes largely to ensure that E15 that is introduced into commerce will continue to be sub sim to Tier 3 E10 certification fuel. We also do not believe that it would make sense to duplicate the criteria from the 2008 sub sim

[185] S. Rep. No. 95–127, 95th Cong., 1st Sess. 90 (1977).

[186] Id.

[187] See 75 FR 68127–68138 (November 4, 2010).

interpretation, especially since many of these updates are focused on accommodating a marketplace where E10 is predominant and E10 is now a certification fuel. For the new definition of sub sim for E15 in this action, we are updating the ASTM International specification references for volatility and driveability for the gasoline-ethanol blended fuels. We are also including a reference to the latest ASTM International denatured fuel ethanol (DFE) quality specification. Finally, we are updating the criteria for the use of additional fuel additives to be consistent with the Tier 3 gasoline sulfur requirements.

We received public comments suggesting that we update the reference to the ASTM standards for sub sim to the latest version of ASTM International standard D4814. One commenter noted that since E15 has a large effect on middle distillation (T50 in particular), EPA should reference the latest ASTM D4814 standard for gasoline as this standard helps ensure that gasoline-ethanol blends continue to meet the driveability index. The driveability index is a measure in the ASTM D4814 standard based primarily on the distillation characteristics of a fuel that helps ensures that spark-ignition engines operate correctly on gasoline. As discussed in Section II.C.6.d, fuels that cause issues with driveability can either directly increase emissions or result in consumers tampering with certified emissions configurations, which can result in increases in emissions. We agree with commenters that we should reference the latest version of ASTM D4814 as it relates to ensuring that the driveability index is met for gasoline-ethanol blends containing up to 15 volume percent. Therefore, we are specifying that only gasoline-ethanol blends that meet the applicable vapor pressure and distillation class requirements as specified in ASTM International Standard D4814–19 are considered physically and chemically substantially similar to Tier 3 E10 certification fuel.

Additionally, we believe it is appropriate that DFE used to produce E15 also needs to meet the latest ASTM International specifications for DFE, ASTM D4806–19. In the E15 partial waiver decisions, we imposed the condition that DFE used to make E15 under the waivers needed to meet a prior version of the ASTM ethanol specification. This condition was imposed in the E15 waivers under CAA sec. 211(f)(4) to help ensure that certain impurities in ethanol were limited to avoid issues with materials compatibility and help ensure quality of the gasoline-ethanol blended fuel when used in a vehicle or engine.[188] We believe it is still important to make sure that DFE used to make E15 meets ASTM D4806 specifications to ensure the quality of the E15. This will help ensure that materials compatibility and driveability are not adversely affected when E15 is used in 2001 and newer light-duty motor vehicles. Therefore, we are defining that only E15 made with DFE that meets ASTM D4806–19 is sub sim.

Finally, we are updating the criteria for additional fuel additives added to E15 that are introduced into commerce under the sub sim interpretation in this action to be consistent with fuel additive requirements for gasoline promulgated in the Tier 3 rule. In prior sub sim interpretations,[189] we limited additives under sub sim to a concentration of no more than 0.25 percent by weight of the finished fuel and to contribute no more than 15 parts per million (ppm) sulfur by weight to the finished fuel. In the sub sim interpretation for E15 in this action, we limit additional fuel additive(s) to a concentration of no more than 1.0 volume percent of the finished fuel and the additional fuel additive(s) must contribute no more than 3 ppm sulfur by weight to the finished fuel. Since we are defining E15 as sub sim to Tier 3 certification fuel when used in MY2001 and newer light-duty vehicles, we need to consider whether additional additives added to E15 would adversely affect emission controls in MY2001 and newer light-duty vehicles. We cannot find that an additive that is five times the specified applicable standard for sulfur content is sub sim to Tier 3 certification fuel, especially in Tier 3 vehicles. The Tier 3 rule set sulfur standards that would expose light-duty motor vehicles on average to sulfur levels of 10 ppm. If we issued the prior parameters for fuel additives under the sub sim interpretation in this action as the prior sub sim interpretations, this would allow the finished fuel to have a sulfur level of 25 ppm, or almost equal to the Tier 2 average sulfur standard of 30 ppm. This could largely negate the purpose of setting more stringent sulfur specification for Tier 3 certification fuel and imposing the Tier 3 gasoline sulfur standard. Therefore, we find that it would be inappropriate to adopt the criteria used in prior sub sim interpretations. We find that it is more appropriate to adopt the Tier 3 provisions for gasoline additives in the regulations at 40 CFR 80.1613 as these were specifically designed to ensure that Tier 3 light-duty vehicles emissions controls are protected from large increases in sulfur from gasoline additives.

10. Implications of ''Substantially Similar'' Interpretation

The new interpretation of ''substantially similar'' that E15 is sub sim to Tier 3 E10 certification fuel discussed in this section would make it lawful for refiners and importers to make and introduce into commerce E15 without the use of the CAA sec. 211(f)(4) E15 partial waivers.[190] This interpretation of ''substantially similar'' in conjunction with the interpretation of CAA sec. 211(h)(4) would extend the waiver from the CAA sec. 211(h)(1) upper RVP limit from 9.0 psi to 10.0 psi to fuels containing 9–15 percent ethanol during the high ozone season.

We intend for this definition to coexist with the existing definition of ''substantially similar'' (hereinafter ''the 2008 definition''). This is appropriate because the 2008 definition is in comparison to indolene, and the new interpretation is in comparison to Tier 3 E10 certification fuel. However, because there are now two certification fuels to which we can draw comparisons, and two definitions of sub sim relating to each fuel, we think it is important to describe how fuel and fuel additive manufacturers will continue to introduce into commerce their fuels and fuel additives and maintain their registrations under 40 CFR part 79. We intend for the existing CAA sec. 211(f)(4) waivers promulgated relative to ''indolene'' to remain available as an option for introduction into commerce for fuels that are nonetheless sub sim to Tier 3 E10 certification fuel. We have taken this approach recognizing that removing existing waivers has the potential to create confusion about the validity of historical introduction into commerce under these waivers and the continued validity of existing registrations for fuels and fuel additives under 40 CFR part 79. For the E15, after the sub sim definition in this action goes into effect, we will presume that fuel and fuel additive manufacturers that have already registered E15 or ethanol for use in the production of E15 under 40 CFR part 79 will introduce E15 into commerce under our new definition of sub sim (as opposed to the

[188] See 75 FR 68127–68138 (November 4, 2010).

[189] See 46 FR 38586 (July 28, 1981), 56 FR 5356 (February 11, 1991), and 73 FR 22281 (April 25, 2008).

[190] We are not asking fuel and fuel additive manufacturers who have existing E15 registrations under the CAA sec. 211(f)(4) waiver to submit new registrations.

211(f)(4) waiver for E15), unless we are told otherwise through an update to the fuel or fuel additive manufacturer's registration under 40 CFR part 79. This will allow fuel and fuel additive manufacturers and downstream parties to introduce E15 with the 1-psi waiver and not run afoul of the 9.0 psi waiver condition under the CAA sec. 211(f)(4) waivers without having to update their registrations under 40 CFR part 79.[191] We believe it would be unnecessarily burdensome to require the hundreds of registrants of E15 or ethanol for use in the production of E15 to update their registrations under 40 CFR part 79 to demonstrate that their E15 or ethanol for use in the production of E15 is sub sim in light of our finding that E15 is sub sim to E10 certification fuel in MY2001 and newer light-duty motor vehicles.

Because the CAA sec. 211(f)(4) waiver is a waiver from being ''substantially similar,'' once E15 is found to be sub sim the waiver is no longer needed in order to introduce E15 into commerce. However, as discussed previously, we intend for the CAA sec. 211(f)(4) waiver to remain available for the introduction of E15 into commerce. Therefore, as previously explained in Section II.A.3, the deemed to comply provision in CAA sec. 211(h)(4)(B), which was promulgated at the inception of the RVP program when industry had just begun blending ethanol in gasoline and requires that the ethanol portion of the blend not exceed the highest permissible ethanol content under the CAA sec. 211(f)(4) waiver, would remain effective with respect to E15. The CAA sec. 211(f)(4) waiver for E15 remains available for the introduction into commerce of E15, and therefore the statutory ''deemed to comply'' criterion that ''the ethanol portion of the blend does not exceed its waiver condition under subsection (f)(4) of this section'' can still be satisfied both by parties that introduce E15 into commerce under the CAA sec. 211(f)(4) waiver or the CAA sec. 211(f)(1) sub sim finding because the ethanol content under either is identical. Our regulations at 40 CFR 80.28, as modified in this action, condition the ''deemed to comply'' provision on specific ethanol content between 9 and 15 percent by volume. For reasons discussed in Section II.D.1, we are not modifying this provision, other than by increasing the maximum allowable ethanol percent from 10 to 15 to reflect our revised interpretation of the CAA sec. 211(h)(4), and thus this regulatory provision would still allow downstream parties to be deemed in compliance and ease the demonstration burdens for gasoline-ethanol blends that can be introduced into commerce under a CAA sec. 211(f)(4) waiver or a substantially similar determination. We are updating our existing regulations at 40 CFR 80.28 to allow for ethanol content up to 15 volume percent to utilize the ''deemed to comply'' provision. We find this treatment appropriate because CAA sec. 211(h)(4) in its entirety should be read to apply to gasoline-ethanol blends containing at least 10 percent ethanol.

The 1-psi waiver would be available to all fuel manufacturers (*i.e.,* refiners and importers) and downstream parties that produce, distribute and sell E15 due to the sub sim determination in this action. However, retailers that produce E15 via a blender pump would still not comply with EPA fuels regulations at 40 CFR parts 79 and 80 unless they make the E15 solely from DFE and certified gasoline (or CBOB). E15 produced at blender pumps could also continue to exceed even an increased RVP limit of 10.0 psi.[192] For further discussion of our fuels' regulations and blender pumps, see the RTC document, available in the docket for this action.

D. Regulatory Amendments

This action finalizes technical amendments that would effectuate our interpretation to allow the 1-psi waiver for E15 during the summer under CAA sec. 211(h)(4) and our interpretation that E15 is sub sim under CAA sec. 211(f) for MY2001 and newer light-duty vehicles. We are therefore taking these actions under both CAA sec. 211(f) and 211(h).

1. Modification of Regulations

First, we are modifying and removing volatility controls associated with our prior interpretation of CAA sec. 211(h)(4). These controls, found in 40 CFR 80.27, place limitations on the RVP of gasoline-ethanol blends at specific concentrations. Given that the primary effect of our proposed interpretation of CAA sec. 211(h)(4) would expand the ''special treatment for gasoline-ethanol blends'' to fuel blends containing 9–15 percent ethanol, we are modifying both: (1) Regulations extending the 1-psi waiver from gasoline containing 9–10 percent ethanol to gasoline containing 9–15 percent ethanol at 40 CFR 80.27; and (2) related defense provisions in 40 CFR 80.28.

In public comments, some commenters suggested that EPA remove the upper bound for ethanol content in 40 CFR 80.27 to be consistent with our new interpretation of CAA sec. 211(h)(4). In particular, they suggested that the regulation should provide the 1-psi waiver for any gasoline-ethanol blend containing at least 10 percent ethanol, or for any gasoline-ethanol blend containing at least 10 percent ethanol that has a waiver under 211(f)(4) or is ''substantially similar.'' In promulgating these regulations, we have determined that CAA sec. 211(h)(4) provides the lower bound for ethanol content, and CAA sec. 211(f) provides the upper bound. We do not find that it would be appropriate to codify in our regulations no upper bound, as the limitations on introduction into commerce under CAA sec. 211(f) are an important mechanism to protect the emissions controls of motor vehicles and nonroad products. Additionally, it would be inappropriate to allow any gasoline-ethanol blend that contains ten volume percent ethanol the 1-psi waiver without consideration in a rulemaking process.

Second, we are removing and modifying provisions in the MMR that were imposed to effectuate the prior 1-psi waiver interpretation under CAA sec. 211(h)(4). Subsequent to the grant of the CAA sec. 211(f)(4) partial waivers for E15, we adopted regulations under CAA sec. 211(c) to ensure that E15 would not be used in certain vehicles and engines for which the waivers did not apply and to effectuate our interpretation of 211(h)(4) at that time. To do so, in addition to the conditions on the waivers that applied to fuel manufacturers, we promulgated regulations to ensure that those same conditions were enforceable on downstream parties. No changes were made to the RVP regulations at 40 CFR 80.27 as a direct result of our interpretation under CAA sec. 211(h)(4) that the 1-psi waiver did not extend to gasoline-ethanol blends with an ethanol concentration greater than 10 percent. Additional regulations on parties that distribute E15 were put in place at 40 CFR 80.1504(f) and (g) (placing prohibitions on the commingling of E10

[191] Downstream parties who are not fuel or fuel additive manufacturers could also introduce E15 into commerce at 10.0 psi under the waiver conditions, even with today's sub sim determination, because those conditions only apply to fuel and fuel additive manufacturers, as discussed in Section II.D.3.

[192] We note that for E15 produced at blender pumps using E85 made with natural gas liquids, use of the deemed to comply provision to demonstrate compliance would not be available. This is because the RVP of natural gas liquids can be as high as 15.0 psi and even a small amount of natural gas liquids could cause the gasoline portion of the blend to not comply with the applicable RVP limitations established under CAA sec. 211(h), which is required under CAA sec. 211(h)(4)(A) to be deemed in compliance. Parties that make E15 at a blender pump using E85 made with previously certified gasoline can take advantage of the ''deemed to comply'' provision and associated affirmative defense at 40 CFR 80.28 if all applicable requirements in 80.28 are met.

and E15), and 40 CFR 80.1503 (placing PTD requirements on E15). These regulations were put in place in order to ensure that the RVP of E15 did not exceed 9.0 psi in accordance with our interpretation of CAA sec. 211(h)(4) at the time. However, since our new interpretation of CAA sec. 211(h)(4) increases the RVP allowance to 10.0 psi, these provisions are no longer necessary. Additionally, because the RVP of E15 will be approximately the same as E10 if produced from the same blendstock, we do not anticipate adverse emissions impacts from providing E15 the 1-psi waiver. Given that we are interpreting CAA sec. 211(h)(4) to extend to gasoline-ethanol blends of up to 15 percent ethanol, the prohibition on the commingling of E15 and E10 is no longer necessary.

Finally, we are removing the PTD requirements related to the 1-psi waiver at 40 CFR 80.1503. In 40 CFR part 80, subpart N, we included PTD language designed to help ensure that E15 that did not receive the 1-psi waiver would be segregated from E10 that did receive the 1-psi waiver. Since we are allowing the 1-psi waiver for E15, we no longer need these PTD requirements. However, parties that produce and distribute gasoline-ethanol blended fuels would still be required to identify ethanol concentrations on PTDs as specified in 40 CFR 80.27 and 40 CFR 80.1503.

2. Status of Misfueling Mitigation Rule Regulations

All other E15 misfueling mitigation provisions in 40 CFR part 80, subpart N, remain unchanged. In the MMR, we promulgated regulations under CAA sec. 211(c)(1), which prohibit the use of E15 in MY2000 and older motor vehicles, nonroad vehicles, engines, and equipment (including motorcycles, and heavy-duty motor vehicles). CAA sec. 211(c)(1) gives EPA authority to ''control or prohibit the manufacture, introduction into commerce, offering for sale, or sale'' of any fuel or fuel additive (A) whose emission products, in the judgment of the Administrator, cause or contribute to air pollution ''which may be reasonably anticipated to endanger public health or welfare'' or (B) whose emission products ''will impair to a significant degree the performance of any emission control device or system which is in general use, or which the Administrator finds has been developed to a point where in a reasonable time it would be in general use'' were the fuel control or prohibition adopted. We promulgated the MMR based on our assessment that E15 would significantly impair the emission control systems used in MY2000 and older light-duty motor vehicles, heavy-duty gasoline engines and vehicles, highway and off-highway motorcycles, and all nonroad products supporting our action under CAA sec. 211(c)(1)(B). This led to our conclusion that under CAA sec. 211(c)(1)(A), E15 use in these particular vehicles, engines, and non-road products would likely result in increased VOC, CO, and NO_X emissions.[193] The regulatory changes to 40 CFR part 80, subparts B and N in this action are solely related to our proposed interpretation to allow the 1-psi waiver for E15 under CAA sec. 211(h)(4) and CAA sec. 211(f). This action does not change the basis of our CAA sec. 211(c)(1)(A) and (B) finding in the MMR that prohibits E15 from use in MY2000 and older light-duty motor vehicles, heavy-duty gasoline engines and vehicles, highway and off-highway motorcycles, and all nonroad products. This action also does not modify the misfueling mitigation measures promulgated in the MMR.

3. Waiver Applicability

As discussed in the proposal, we interpret CAA sec. 211(f) as applying the waiver conditions to fuel and fuel additive manufacturers as defined in 40 CFR 79.2. Therefore, the regulatory amendments promulgated in this rulemaking apply to downstream parties, such as oxygenate blenders, who are not fuel or fuel additive manufacturers.[194] Accordingly, so long as downstream parties, such as oxygenate blenders, are only utilizing CBOB and denatured fuel ethanol to create E15, these parties can apply the 1-psi waiver and thus can blend and sell E15 at 10.0 psi.

We received comment on this mechanism for providing E15 the 1-psi waiver, and respond to those comments in the RTC document, available in the docket for this action. This interpretation of the applicability of the CAA sec. 211(f)(4) waiver conditions, in conjunction with our new interpretation of CAA sec. 211(h)(4), is an independent basis from the CAA sec. 211(f)(1) sub sim interpretation for the regulatory amendments finalized in this rulemaking.

We also find that, should fuel and fuel and additive manufacturers choose to introduce E15 into commerce under the CAA sec. 211(f)(4) waiver, these parties would continue to be subject to the 9.0 psi RVP limit in the waiver conditions for E15. Downstream parties that only add oxygenate in an allowable amount (*i.e.,* as allowed under the CAA sec. 211(f)(4) waivers) are not fuel and fuel additive manufacturers, and thus would not need to meet the 9.0 psi waiver condition.

E. Expected Impact of This Rule on E15 Use

We do not believe that providing E15 with the 1-psi waiver will substantially change the current trend in E15 use. E15 can currently be sold legally for use in MY2001 and newer light-duty motor vehicles in the United States under the 211(f)(4) waivers. It has been 9 years since EPA first granted the E15 211(f)(4) partial waivers; retailers currently offer E15 at roughly just 1 percent of retail stations as discussed in Section II.A.2. We expect that this slow adoption of E15 would continue even if we did not provide E15 the 1-psi waiver. However, we also do not expect this action to change the rate of growth appreciably. We believe that providing E15 with the 1-psi waiver will not result in a significant expansion of E15 offered at retail stations. This is due to the fact there are several hurdles, independent of EPA's fuels regulations, that inhibit the expansion of E15 into retail markets.

The chief hurdle to the introduction of E15 at additional retail stations is the requirement under 40 CFR 280.32 that retailers must demonstrate that underground storage tank (UST) systems are compatible with fuels stored at retail stations. Several commenters from the gasoline marketing and retail industry highlighted concerns over demonstrating compatibility of E15 with UST systems that have slowed the adoption of E15. Demonstrating compatibility can be especially difficult for some retailers as the full useful life of some UST system components can be up to 30 years and documentation of all of the various components often no longer exists, particularly when retail stations often change ownership several times during this time period.

Commenters also noted that a majority of retailers are small businesses that would need to make substantial investments to ensure the compatibility of UST systems and fuel dispensers with E15, which can cost up to hundreds of thousands of dollars per station depending on station configuration and what part of the UST system needs upgrading.[195] As

[193] 76 FR 44422 (July 25, 2011).

[194] Those fuel and fuel additive manufacturers would continue to be subject to the CAA sec. 211(f)(4) E15 partial waivers conditions, including the 9.0 psi RVP limitation. Therefore, in the absence of a sub sim interpretative rule finding that E15 is sub sim, we intend for the CAA sec. 211(f)(4) waiver to remain in effect.

[195] See ''Analysis of the Potential Use of Biofuels toward the Renewable Fuel Standard in 2014,''

Continued

commenters noted, the best opportunity to upgrade retail infrastructure is when it is time to turn over the UST system or fuel dispensers. As commenters noted, since less than 3 percent of retail stations turn over UST systems per year, this limits the opportunities for new E15 offerings.

Furthermore, not all retail stations that turn over their UST systems are going to offer E15. Much of the introduction of E15 to date has been in the Midwestern states, where blending incentives and investments in retail infrastructure have been present.[196] While some retailers in states outside the Midwest have begun offering E15, it has mainly been limited to retail stations with blender pumps. Therefore, we would expect far fewer than 3 percent of retail stations nationwide to turn over to E15 compatible UST systems annually. Historically, as there are less than 2,000 stations offering E15 nationwide and E15 has been a legal fuel for nine years, this translates to about a 0.1 percent increase in the number of retail stations offering E15 each year. We expect a comparable trend to continue.

Another hurdle to E15 market penetration highlighted by some commenters is a lack of consumer demand or consumer acceptance. These commenters noted that retailers will not limit their customer base and therefore will continue to make E10 available for vehicles, engines, and equipment that are not allowed to use E15.[197] For the foreseeable future, millions of MY2000 and older light-duty vehicles and hundreds of millions of nonroad vehicles, engines, and equipment will continue to be in use, and retailers will need to provide consumers with suitable fuels for these products. Given this continued demand for E10 and the practicality of offering fuels that are only usable in certain segments of the national fleet, many retailers have decided to offer E10 which is usable in the entire fleet rather than offering both E10 and E15. Additionally, as several commenters noted, consumers are not requesting that stations offer E15 instead of E10 and some consumers have questions over the use of E15 in their vehicles and engines (even when allowed to use E15 under the CAA). Some commenters noted that it has only been in the last few years (not 2001) that most automakers have begun to state in owner's manuals that E15 use is acceptable, and several large auto manufacturers still include language in their owner's manuals warning against E15 use; almost all owner's manuals for nonroad products warn against E15 use.[198] While we have evaluated whether E15 is sub sim to Tier 3 E10 certification fuel, we do not have authority under the CAA to impact what manufacturers put in their owner's manuals or how they implement their general warranties. The disparity between what vehicles and engines we have approved for E15 use under our 211(f) authority and which fuels manufacturers recommended using in owner's manuals can lead to confusion and lack of consumer acceptance of E15. This lack of consumer acceptance and demand has resulted in E15 stations being primarily located in the Midwestern states. As long as there is some uncertainty over whether vehicles, engines, and equipment can and should use E15, these commenters argue, retailers will be hesitant to offer E15. We believe that these comments, primarily submitted by marketers and retailers of gasoline, are accurate and we believe these hurdles all factor into our projection that this action is unlikely to appreciably impact E15 market penetration.

E15 also faces an economic challenge to market growth, even with the 1-psi RVP waiver. Since the fuel distribution system will for the foreseeable future only be capable of distributing BOBs designed for E10, refiners will be unable to take advantage of the increased octane value offered by 5 percent more ethanol in the gasoline they produce. It is this octane value of ethanol that in recent years has been a key factor in enabling ethanol to compete favorably with gasoline. Rarely has ethanol been cheaper than gasoline on an energy equivalent basis.[199] As a consequence, there is seldom a meaningful economic driver to produce and distribute E15 compared to E10, especially given the service station upgrade costs.

A final factor that presents a hurdle to E15 expansion is that E15 made at blender pumps often is done so inconsistently with EPA's regulatory requirements. As discussed in the proposal, E15 made at blender pumps is often made with certified E10 (or CBOB) and E85 (made with denatured fuel ethanol and uncertified hydrocarbon blendstocks, *i.e.,* natural gas liquids).[200] While data is limited, we believe that approximately 50 percent of stations offering E15 make E15 in this manner. The potential to violate EPA's regulatory requirements has resulted in many parties choosing not to offer E15 until EPA provides a legal pathway to make E15 at blender pumps. As mentioned in the proposal, we had previously proposed requirements on E85 used to make E15 at blender pumps that would both assure that the E15 met EPA's fuel quality standards and provide a cost-effective compliance mechanism for the retailers operating blender pumps to demonstrate compliance.[201] Since we have not finalized those requirements or addressed the technical challenges raised in public comments, we expect regulatory uncertainty regarding E15 made at blender pumps to further inhibit E15 expansion.

As another example of these hurdles, E15 has not expanded significantly into RFG areas, where the RVP of E15 has not been limited by the 1-psi waiver. RFG represents over 30 percent of the gasoline in the United States and refiners of RFG must comply with the summertime RFG VOC performance standards, which effectively require refiners to account for the increase in RVP that results from adding ethanol into RFG. The result of this is that oxygenate blenders have been able to produce E15 using the same RBOB as E10 in the summer since EPA granted the first E15 waiver 9 years ago. However, according to the E15 compliance and RFG surveys, only five RFG areas (Chicago, Milwaukee, St. Louis, Washington DC, and Dallas) out of 26 RFG areas have had any E15 marketed in those areas and even in those areas, E15 has only been offered in a limited number of stations.[202] We

available at *https://ethanolrfa.org/wp-content/uploads/2015/09/Informa_Potential_Use_of_Biofuels_toward_RFS_20141.pdf.*

[196] For example, the State of Iowa provides biofuels tax credits for E15, see *https://www.agmrc.org/renewable-energy/renewable-energy-climate-change-report/renewable-energy-climate-change-report/may-2017-report/overview-of-iowa-biofuel-tax-credits-and-ethanol-blends-sales-e10-e15-e20-and-e85.* Additionally, USDA provided grants under its Biofuel Infrastructure Partnership program; see *https://www.fsa.usda.gov/programs-and-services/energy-programs/bip/index.*

[197] In certain situations, such as limited USTs or pump infrastructure, retailers are unable to make both E10 and E15 available. In these situations, commenters suggested that retailers would chose to make E10 available rather than E15.

[198] See ''Head Like a Hole,'' available at *http://www.fuelsinstitute.org/Media/The-Commute/Head-Like-a-Hole.*

[199] Ethanol price data from USDA is available at *https://www.ers.usda.gov/data-products/us-bioenergy-statistics/us-bioenergy-statistics/#Prices.*

[200] See 84 FR 10595 (March 21, 2019).

[201] See 81 FR 80862–80864 (November 16, 2016).

[202] According to the RFG and E15 surveys, only 78 retail stations in RFG areas are registered to sell E15. This is out of 22,287 retail stations in all RFG areas or 0.35 percent of RFG stations. This is substantially lower than the national rate of around 1.13 percent of retail stations nationally. This difference in number, despite E15 not being limited by the 1-psi waiver in RFG areas in the summer, is likely a result of the factors discussed in this section. RFG areas tend to be in major metropolitan areas which may have higher costs to install retail infrastructure compatible with E15. This further

believe this lack of expansion of E15 in RFG areas is primarily a result of the various hurdles discussed in this section, and we expect similar results in conventional areas as a response to this action to allow the 1-psi waiver for E15.

Because this action does not change the rate of UST system and fuel dispenser turnover, increase consumer demand or acceptance for E15, ensure greater economic value for E15, or resolve the regulatory issues associated with producing E15 at blender pumps; we do not believe providing E15 the 1-psi waiver will result in a substantial expansion of E15 being offered at new retail locations.

Several commenters suggested that this action would result in significant impacts on air quality or have a significant economic impact. These commenters typically assume that every vehicle, engine, and piece of equipment in country will begin using E15 and that if the entire national fleet moved from E10 to E15 use substantial increases in regulated pollutants, widespread degradation of air quality, or necessitate billions of dollars of investments on the part of small businesses to offer E15 as a result. As previously mentioned, we do not expect that allowing E15 to receive the 1-psi waiver would result in widespread E15 use. This action does not require that any party make, distribute, sell, or use E15. As such, this action also does not address the hurdles to entry of E15. Based on the experience of E15 in areas that can already use E15 year-round (*i.e.,* RFG areas), it is unlikely that providing the 1-psi waiver to E15 would lead to a substantial increase in E15 use as a result of this action.

F. E15 Criteria Pollutant and Air Toxics Emission Impacts

As discussed above, we expect the emissions of E15 at 9 psi RVP to be substantially similar to those of E10 Tier 3 certification fuel when used in Tier 3 light-duty vehicles. This section describes the expected change in in-use emissions resulting from this action, assessing the evaporative and exhaust emissions of E15 with the 1-psi RVP waiver relative to the E10 with the 1-psi RVP waiver already available in the marketplace nationwide. While we attempt to estimate the emissions effects of E15 relative to E10 on a per-vehicle basis, we do not attempt to quantify what these changes mean for air quality in any specific area or the nation as a whole. We do not believe that as a result of this rulemaking a significant number of additional retail stations will offer E15, due to several hurdles described in Section II.E. As such, it would be difficult to quantify any effects (positive or negative) with confidence associated with providing E15 the 1-psi waiver. Such effects, if quantified, are unlikely to affect ambient air quality beyond the margin of error in air quality modeling. In Section II.C.6 we present estimated changes in emissions on a per-vehicle basis for illustrative purposes.

Evaporative emissions from vehicles comprise approximately 60 percent of the VOC emissions during summertime conditions from the current vehicle fleet based on results produced by MOVES2014b, and such VOC emissions contribute to ambient levels of ozone, PM, and air toxics, all of which adversely affect public health and welfare. Today's vehicles are equipped with charcoal canisters to capture vapors generated during refueling as well as daily diurnal temperature fluctuations. This stored vapor is then drawn into the engine and combusted during vehicle operation.

Currently and historically, vehicle manufacturers have been required to certify their vehicles on test gasoline with a volatility of 9.0 psi RVP under severe operating conditions similar to what might be expected on days with high ozone concentration. The evaporative emission standards have been made more stringent over time, such that the Tier 3 standards require essentially zero vapor loss during normal operation on 9.0-psi fuel. Increasing fuel RVP from 9.0 psi to 10.0 psi increases fuel vapor generation significantly under summertime conditions, which can overwhelm a vehicle's evaporative control system and push it out of compliance. Consequently, controlling the volatility of gasoline during the summer is important in order to control the evaporative VOC emissions from vehicles and engines in-use.

This action extends the 1-psi RVP waiver to E15, allowing its in-use volatility to go from 9.0 psi to 10.0 psi RVP. Viewing this change in isolation, one might expect a significant increase in in-use evaporative emissions, and some public comments raised this concern. To accurately assess emission impacts in this case, however, we need to examine current real-world circumstances. Namely, we expect any additional E15 introduced into the market to displace E10 that is being sold and that already carries the 1-psi waiver in CG areas (E10 has nearly 100 percent market share for gasoline sold in the U.S.). Thus, any increase in in-use emissions that might have resulted from the 1-psi waiver applying to E15 is already occurring with E10. Rather, displacement of E10 with E15 is expected to lower the RVP of in-use gasoline by as much as 0.1 psi when made from the same RBOB or CBOB.[203] We believe this will continue to be the case until E15 use becomes widespread.[204]

Use of E15 will also have other criteria pollutant emission impacts beyond those related to volatility as described above. Assuming E15 is made from the same RBOB or CBOB as E10, we expect the additional 5 volume percent ethanol to further dilute hydrocarbon fuel components such as aromatics, producing changes in several exhaust emissions such as NO_X, NMOG, and benzene.[205] [206] Ethanol also causes changes in the volatility profile of the blended fuel, typically lowering the mid-point distillation temperature (T50) significantly, and the 90 percent temperature (T90) slightly.[207] Table II.F–1 shows predicted fuel property and exhaust emission changes for Tier 2 vehicles using both E10 certification gasoline and a typical market E10 as baselines for comparison. Results using the EPAct model developed from the EPAct/V2/E–89 study described in Section II.C.6.a suggest E15 are expected to produce slightly lower CO and benzene, and slightly higher NO_X and PM compared to their E10 blending base. Changes in total NMOG (or VOC) vary in direction depending on the T50 of the blending base.

illustrates how some of the hurdles to E15 introduction will not be addressed by providing E15 with the 1-psi waiver.

[203] ''Determination of the Potential Property Ranges of Mid-Level Ethanol Blends.'' American Petroleum Institute, Washington, DC. April 2010.

[204] We believe it would be unlikely for refiners to produce an E15 CBOB for such a small difference in RVP (*i.e.,* 0.1 psi RVP). However, refiners may want to create a CBOB with a slightly lower octane level to account for the increased octane from the additional ethanol in E15 versus E10. We believe this would only occur if E15 comprised a large part of a conventional gasoline area's market; something that took decades to happen with E10.

[205] For the effects of sulfur on emissions see Table ES–3 in ''The Effects of Ultra-Low Sulfur Gasoline on Emissions from Tier 2 Vehicles in the In-Use Fleet.'' US EPA Office of Transportation and Air Quality, Ann Arbor MI. EPA–420–R–14–002, March 2014.

[206] For the effects of ethanol and aromatics on emissions see Tables ES–1 through ES–4 in ''Assessing the Effect of Five Gasoline Properties on Exhaust Emissions from Light-Duty Vehicles Certified to Tier 2 Standards: Analysis of Data from EPAct Phase 3 (EPAct/V2/E–89): Final Report.'' US EPA Office of Transportation and Air Quality, Ann Arbor MI. EPA–420–R–13–002, March 2013.

[207] ''Determination of the Potential Property Ranges of Mid-Level Ethanol Blends.'' American Petroleum Institute, Washington, DC. April 2010.

TABLE II.F–1—EXAMPLE EXHAUST EMISSION IMPACTS OF E15 BASED ON EPACT MODEL

	Fuel properties used in analysis					E15 emissions impact relative to shaded baseline row above				
	Eth. (vol%)	Arom. (vol%)	RVP (psi)	T50 (°F)	T90 (°F)	CO (percent)	NMOG (percent)	NO_X (percent)	PM (percent)	Benzene[b] (percent)
Baseline: E10 certification fuel at 9 psi	10.0	23.0	9.0	200	325	Baseline for comparison				
E15 at 9 psi (splash blend with baseline)	15.0	21.9	9.0	163	321	−2.4	−5.5	1.9	2.8	−10.9
E15 at 10 psi (splash blend with baseline)	15.0	21.9	10.0	163	321	−1.3	−8.0	1.9	2.8	−10.9
Baseline: E10 market fuel at 10 psi	10.0	23.0	10.0	180	320	Baseline for comparison				
E15 at 10 psi (splash blend with baseline)	15.0	21.9	10.0	160	316	−1.9	2.2	2.5	4.1	−8.2
E15 at 10 psi (match blend per MOVES Fuel Wizard)[a]	15.0	21.7	10.0	167	318	−2.6	1.4	2.7	4.1	−7.7

[a] The MOVES Fuel Wizard attempts to estimate how properties would change in a widespread blending scenario.
[b] The benzene effect shown is for a cold-start driving mode representing the first few minutes of vehicle operation. Other emission effects shown represent a typical mix of cold-start and warmed-up driving.

If E15 use becomes widespread in the longer term, refiners may adjust the base blendstock to accommodate the additional ethanol. During the rapid expansion of E10 blending between 2007–2012, aromatics levels were observed to decline by a few volume percent while pump octane levels stayed constant, and octane match-blending is understood to have been a contributing factor.[208] [209] For other fuel properties, such as sulfur and benzene content, refiner control could be relaxed slightly for E15 blendstocks with the finished market E15 still meeting with the regulatory limits. E15 made with such match blends would then have slightly different emission impacts compared to the splash blends made with E10 blendstocks expected for the near term as shown in Table II.F–1.

Several commenters highlighted the alleged benefits or disbenefits of E15 use on regulated emissions and air quality. These commenters often assumed that entire areas or the entire national fleet of vehicles and engines would switch from using E10 to E15 as a result of this action. While it is possible that measurable emissions and air quality effects could occur due to the small estimated per vehicle changes in exhaust and evaporative emission if the entire vehicle and engine fleet of an area or the nation went from using E10 to E15, such an analysis is inappropriate for this rulemaking. As discussed in Section II.E, we do not believe that E15 use will expand more quickly than it currently is expanding as a result of this rulemaking. E15 has been a legal fuel for use in the marketplace since 2010, and as discussed in Section II.A.2, it is still sold in limited quantities at only about one percent of retail stations nationwide. This rulemaking does not address the other hurdles to E15 entering the marketplace and does not provide additional incentives to parties that wish to make, distribute, or sell E15 to accelerate E15 use. As discussed in Section II.A.2, this situation is analogous to the situation when E10 was granted the 1-psi waiver in 1990, and the market saw little response in ethanol use until the mid-2000s when MTBE was banned, the price of crude oil rose making ethanol cost competitive with gasoline, and the RFS was created by the Energy Policy Act of 2005. As such, we believe that it would be inappropriate to attribute any meaningful environmental impacts (positive or negative) to increased E15 use as a result of this rulemaking.

G. E15 Economic Impacts

Due to the barriers to market entry discussed in Section II.E, we anticipate that the economic impacts of providing E15 with the 1-psi waiver will be small. This section briefly describes the potential benefits and costs of providing E15 with the 1-psi waiver. To the extent there would be small impacts from this rulemaking on the volume of ethanol use, the appropriate place to reflect those impacts would be in rulemaking actions associated with implementation of the renewable fuels program, where EPA considers the impacts of changes in biofuel volumes.

1. Potential Benefits of This Action

We anticipate that providing the flexibility to use E15 at 10.0 psi RVP in the summer could help incentivize some retailers to introduce E15 into the marketplace, but that such incentives may be outweighed by the other hurdles to widespread E15 use. In situations where denatured fuel ethanol might be cheaper than gasoline, such as in the Midwest where distribution costs are low, parties may elect to make E15 more widely available, which may result in a modest decrease in fuel prices at the pump. However, even then this may not be sufficient to overcome the significant investment needed to upgrade an existing retail station to be compatible with E15 if consumer demand for E15 remains low. Any additional ethanol that is blended as a result of this action could help to offset a portion of the projected decline in U.S. ethanol use due to projected declining gasoline consumption. This in turn could provide energy security benefits.

2. Costs of This Action

Finalizing the 1-psi waiver for E15 in the summer may help open new market opportunities for E15. However, fuel manufacturers and distributors of E15 would not be compelled to make or offer

[208] See Figure 3–4 of the Regulatory Impact Analysis for ''Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards.'' EPA–420–R–14–005, February 2014.

[209] See Figure 65 of ''Fuel Trends Report: Gasoline 2006–2016.'' EPA–420–R–17–005. October 2017.

E15 and could choose to offer E15 as dictated by market demands and individual business decisions.

Overall, we anticipate very little change in costs regarding the proposed regulatory provisions to allow E15 to receive the 1-psi waiver in the summer. This action places no new regulatory burdens on any party in the gasoline or denatured fuel ethanol distribution system and modifies, but does not remove, PTD requirements for E15. Hence, we expect that these proposed provisions would not substantially alter the cost of compliance for parties that produce and distribute E15.

III. RIN Market Reforms

A. Background

Under CAA sec. 211(o), EPA is required to set renewable fuel percentage standards every year.[210] To comply, obligated parties [211] can purchase and blend the requisite volumes of renewable fuels into the petroleum-derived transportation fuels they produce or import. However, to allow the market to function more efficiently, to avoid market disruption, and to assist obligated parties in meeting their individual RVOs, Congress directed EPA to establish, through a transparent public rulemaking process, a system for the generation and use of renewable fuel program credits.[212] The credits created under this program are known as RINs. RINs are credits that are generated upon production of qualifying renewable fuel and ultimately used by obligated parties to demonstrate compliance with their RVOs.[213] Renewable fuel producers and importers generate and assign RINs to the renewable fuel they produce or import. These RINs are then transferred with the renewable fuel to the downstream parties that blend the renewable fuel into transportation fuel. In lieu of blending the renewable fuel themselves to demonstrate compliance, obligated parties have the option to instead purchase RINs from other parties that blend renewable fuel.

RIN prices are a function of multiple factors, including but not limited to changes in petroleum prices, agricultural feedstock (*e.g.,* corn, soy) prices, and expectations of future market shifts and standards. RIN prices may also fluctuate as the market responds to RFS standards and expectations of future EPA policy decisions. While there are many different factors that affect RIN prices, a review of the historical RIN price data demonstrates that RIN prices generally follow expected market principles.[214]

Obligated parties that purchased RINs on the market for compliance in 2013 saw their D6 RIN prices substantially increase from the year prior.[215] Though this increase in D6 RIN prices was the result of changes in the market, the most significant of which was reaching the E10 blendwall,[216] increasing D6 RIN prices did raise concerns regarding whether market manipulation played some role in elevated prices. In comments to proposed EPA rulemakings (such as the 2018 and 2019 RVO proposals) and via other communication with EPA staff, some stakeholders described conditions that they believed make the RIN market vulnerable to anti-competitive behavior. For example, commenters described a thin market volume, opaque price signals, and inelastic demand and supply curves and provided specific examples of behavior they believed to be manipulative, such as phantom RIN offers that suddenly vanish and reappear at higher prices after a party attempts to buy them at the purported asking price.[217] These stakeholders also believed that, as a result of market conditions and price volatility, anti-competitive behavior is taking place. For example, commenters argued that a small number of sophisticated market participants control a large number of ''surplus'' RINs that they hoard to drive up prices, at which point they can sell the RINs to realize a higher profit.

We take these claims of market manipulation seriously and took formal action prior to the notice of proposed rulemaking (NPRM) to investigate claims of manipulation. In March 2016, EPA entered into a Memorandum of Understanding (MOU) with the Commodity Futures Trading Commission (CFTC).[218] Under the MOU, we provided CFTC with certain RIN data for analysis in order to facilitate an EPA investigation. We still have not seen data-based evidence of RIN market manipulation, but the potential for such behavior remains a concern.

In the 2018 and 2019 RVO NPRMs, we broadly sought input on potential regulatory changes related to RIN trading as well as on ways to increase program transparency.[219] We received many comments to the 2019 RVO NPRM in support of publicly posting more RFS program data. In response, in September 2018, we began publishing weekly aggregated RIN prices and transaction volumes. We also received a wide variety of comments regarding the other ideas we put forward, including requiring public disclosure if a party holds a certain percentage of the RIN market and prohibiting non-obligated parties from purchasing separated RINs. Some comments expressed support for these ideas and offered other ideas. Other comments opposed both the specific reform proposals and the general concept of interfering with the open RIN market in any way.

On October 11, 2018, the President issued a White House statement directing EPA to initiate a rulemaking to address RIN price manipulation claims and increase transparency in the RIN market. Specifically, the memorandum directed EPA to consider potential reforms to the RIN regulations, including but not limited to the following proposals:

- Prohibiting entities other than obligated parties from purchasing separated RINs.
- Requiring public disclosure when RIN holdings held by an individual actor exceed specified limits.
- Limiting the length of time a non-obligated party can hold RINs.
- Requiring the retirement of RINs for the purpose of compliance be made in real time.

Pursuant to this directive, we proposed regulatory changes reflecting all four reforms identified in the President's Directive and requested comments on both the positive and negative consequences of each reform. For each reform proposal, we evaluated

[210] See, *e.g.,* 2019 RVO final rule (83 FR 63704, December 11, 2018).

[211] Obligated parties are refiners and importers of gasoline and diesel fuel. See 40 CFR 80.1406.

[212] See CAA sec. 211(o)(5).

[213] D3 and D7 RINs are used for the cellulosic biofuel RVO, D4 RINs are used for the biomass-based diesel RVO, D5 RINs are used for the advanced biofuel RVO, and D6 RINs are used for conventional renewable fuel RVO.

[214] For a thorough review of historical RIN price data, see Section III.B of the NPRM preamble (84 FR 10605–10607, March 21, 2019) and the memorandum, ''RIN Market Assessment,'' available in the docket for this action. Our assessment of RIN price behavior and the rationale behind it remains the same. See also the RTC document for a response to comment related to RIN price behavior.

[215] See the memorandum, ''RIN Market Assessment,'' available in the docket for this action.

[216] The E10 blendwall occurred when the implied conventional biofuel volume of ethanol established by the RFS program exceeded the volume of ethanol that could be blended into gasoline at a rate of up to 10 percent.

[217] See, *e.g.,* comments from Monroe Energy (Docket Item No. EPA–HQ–OAR–2018–0167–0622).

[218] See ''Memorandum of Understanding Between the Environmental Protection Agency and the Commodity Futures Trading Commission on the Sharing of Information Available to EPA Related to the Functioning of Renewable Fuel and Related Markets'' (2016), available at *https://www.epa.gov/sites/production/files/2016-03/documents/epa-cftc-mou-2016-03-16.pdf.*

[219] See 82 FR 34206 (July 21, 2017) and 83 FR 32024 (July 10, 2018).

comments already submitted to EPA describing its advantages and disadvantages. We also evaluated how a reform could be designed and implemented, whether a reform could be gamed or have unintended consequences, and what potential burden and cost it could place on regulated parties and on EPA. In the same action, we also proposed a fifth reform of enhancing EPA's market monitoring capabilities by imposing new recordkeeping and reporting requirements to collect more comprehensive data on RIN market transactions and participants and by hiring a third party with market monitoring expertise to conduct market analysis.

When we originally contemplated the reforms, we understood that restrictions could affect the flexibility and liquidity that the RIN system and regulations were designed to maximize. For example, numerous comments received on the 2019 RVO NPRM stated that changes to the RIN market structure could reduce liquidity, increase volatility, and make the RIN market function less efficiently, increasing costs to obligated parties and consumers. Interested stakeholders also suggested that some reforms could affect the ability of small, less recognized, or new renewable fuel producers and blenders to enter the market. Finally, we understood that some reforms could inadvertently affect otherwise legitimate market behavior. For example, parties that purchase RINs on the expectation that RIN prices will increase may provide an important price signal and increase market liquidity with their actions. Therefore, when we proposed the reforms, we took into consideration the potential for the reforms to harm the RIN market and communicated our intent to finalize the reforms that we concluded most likely to be beneficial for the RFS program, the RIN market, and the RFS stakeholders, and that do not impose unnecessary burden or cause unintended consequences.

After evaluating the comments received on the proposal, we have decided to finalize two of the proposed five reforms: Public disclosure requirements when a party's separated D6 RIN holdings exceed specified thresholds (Reform 1) and reporting and recordkeeping requirements to enhance EPA's market monitoring capabilities (Reform 5). We have decided to continue to collect and evaluate data and not to take final action at this time with regard to the other three of the five reforms that we proposed related to: RIN retirement compliance frequency (Reform 2), which parties can purchase RINs (Reform 3), and how long non-obligated parties can hold D6 RINs (Reform 4). In Section III.B, we discuss our overall rationale for finalizing only a subset of proposed reforms and our general response to market manipulation concerns. In Section III.C, we discuss the elements we are finalizing related to Reform 1. In Section III.D, we discuss the elements we are finalized related to Reform 5. In Section III.E, we discuss the rationale behind not taking final action at this time with respect to proposed Reforms 2, 3, and 4, and the steps we intend to pursue related to these reforms in the future.

B. Market Manipulation

Price manipulation through anti-competitive behavior, similar to what is referred to as cornering or squeezing the market, and false or misleading representations in transactions, is antithetical to effective market operation.[220] Were such anti-competitive behavior to occur, it could undermine the confidence of market participants in the RIN market and undermine the RFS program itself. However, as stated in the proposal and reaffirmed in this action, we have conducted and reviewed analyses using non-public, individual-level data and have found no data-based evidence such anti-competitive behavior occurring between market participants.

First, prior to the NPRM, we took formal action to investigate claims of manipulation by entering into an MOU with CFTC and providing them with certain RIN data for analysis in order to facilitate an EPA investigation.

Second, during the development of the NPRM, we conducted a screening analysis using individual-level RIN holding data to evaluate historical market shares. We found that the maximum level of D6 RINs that any one party held at a time was between 10 and 14 percent of all D6 RINs.[221] These figures are commensurate with the gasoline and diesel production market share of the largest refiners, which suggested to us that they were likely appropriate holding levels. We also compared each obligated party's D6 RIN holdings to 130 percent of their implied conventional biofuel RVO.[222] We chose 130 percent because it allows for holdings of 100 percent of their implied conventional biofuel RVO, 20 percent for banking toward the next year's RVO, and 10 percent for additional flexibility and uncertainty. We found that only three obligated parties would have exceeded the 130-percent value at least once in the 2018 compliance year.[223] We were unable to fully aggregate holdings and RVOs by corporate affiliates or account for RINs that an obligated party was holding for a small refinery with an exemption approval from EPA. We were also unable to account for refinery sales, acquisitions, or shutdowns in the year used to calculate RVOs. After reviewing these three companies more closely, taking into consideration the information we were unable to account for in the original screening analysis, we did not identify any instances of excessive holdings or manipulative behavior.

Third, since publishing the NPRM, we conducted additional analysis on the distribution of D6 RIN holdings across the marketplace. On three dates in the 2017 compliance year, chosen because they are representative of seasonal RIN market activity, we evaluated each company's separated D6 RIN holdings beyond what was needed for compliance with the next RVO in the case of obligated parties.[224] On the three dates we examined, we found that ''excess'' D6 RINs (those RINs in excess of individual RVOs) were available from between 114 and 145 parties, with no single party holding more than 14

[220] Such behaviors may also violate the anti-fraud and anti-manipulation provisions of the Commodity Exchange Act. See, *e.g.,* Section 9(a)(2) of the CEA, 7 U.S.C. 13(a)(2) (2012), which states that it is a felony for ''Any person to manipulate or attempt to manipulate the price of any commodity in interstate commerce . . . or to corner or attempt to corner any such commodity or knowingly to deliver or cause to be delivered for transmission through the mails or interstate commerce by telegraph, telephone, wireless, or other means of communication false or misleading or knowingly inaccurate reports concerning crop or market information or conditions that affect or tend to affect the price of any commodity in interstate commerce.'' Section 6(c)(1) of the CEA, 7 U.S.C. 9(1) (2012), titled Prohibition against manipulation, states that ''it shall be unlawful for any person, directly or indirectly, to use or employ, or attempt to use or employ, in connection with . . . a contract of sale of any commodity in interstate commerce . . . any manipulative or deceptive device or contrivance. . . .''

[221] The full analysis is detailed in the memorandum, ''Daily Comparison of Individual RIN Holdings to Total Available RINs,'' available in the docket for this action.

[222] We only looked at obligated parties whose separated D6 RIN holdings exceeded 450 million at least once in compliance year 2017.

[223] We aggregated all facilities by their company ID in EMTS to get a company total for both RIN holdings and thresholds. See calculations in the memorandum, ''Threshold Calculations for D6 RIN Holding Parties,'' available in the docket for this action.

[224] The full analysis is detailed in the memorandum, ''Percentage of D6 RINs Held by a Single Party,'' available in the docket for this action.

percent of all ''excess'' D6 RINs. See Table III.B–1 for the results of this analysis.

Table III.B–1 for the results of this analysis.

TABLE III.B–1—PERCENTAGE OF ALL D6 RINS HELD BY A SINGLE PARTY

Range of ''Excess'' D6 RINs (percent)	Number of parties in the range		
	10/1/17	12/1/17	3/1/18
8–14	2	3	2
5–8	3	1	4
3–5	3	4	1
2–3	5	4	6
1–2	11	10	10
<1	119	123	91
<14	143	145	114

From this analysis, we conclude that ''excess'' RIN holdings are spread across a large number of parties and that no single party controls an excessive share of the market. In addition, many commenters stated that they have never encountered manipulative behavior in the RIN market and disagree with the concerns that manipulation is occurring or has occurred. For example, a group of associations whose members represent approximately 90 percent of retail sales of motor fuel in the U.S. indicated that none of its constituent associations' members have seen any transactional problems with the current RIN trading structure. Several commenters stated that the reforms EPA proposed are, effectively, a ''solution in search of a problem.''

We understand that some parties remain concerned about potential market manipulation. Among the comments received on this action, some describe scenarios that appear to the commenter to have been driven by manipulative behavior. Upon examination, however, at least some of these scenarios could be caused by legitimate, non-manipulative market behavior. For example, one commenter describes entering into a forward purchase contract with a counterparty at a price indexed to the future RIN price. The commenter observes the counterparty purchase RINs on the spot market at what they believe are artificially high prices to ''drive up'' the future index price. We note, however, that a party would need to control an excessive share of the RIN market in order to exercise such undue influence on the spot price, and we have found through our analysis that no party has such market share. We find that the RIN spot price in this case could be rising naturally, consistent with market fundamentals. Furthermore, these comments do not contain details of any dates, prices, transaction volumes, or parties involved, so we cannot evaluate them further.

Another commenter compares RIN market data with data from the ethanol, oil, and natural gas markets and presents analytic findings about market inefficiency, such as price volatility, and claim that the results correlate to market manipulation. As explained further in the Response to Comments (RTC) document,[225] these market analyses identify no actual instances of manipulative behavior and merely suggest that market manipulation is a risk because of how the market is designed and functions. On the whole, we do not find these comments or analytic findings to be compelling evidence demonstrating that market manipulation has occurred. We believe that other factors unrelated to market manipulation are more likely to have caused the market dynamics observed by the commenter. For example, as explained in detail in the NPRM, our analysis indicates that RIN price volatility can be largely attributed to market responses to RFS standards and expectations of future EPA policy decisions.[226] Several commenters provided evidence in support of this conclusion. In addition, we do not believe that comparing the liquidity of the RIN market to the liquidity of the ethanol, oil, and natural gas markets is appropriate. As one commenter notes, the RIN market is significantly smaller in size than those markets, which would naturally make it less liquid than a larger market because of the fewer number of parties available to transact with one another. We also note that traditional liquidity measures do not account for the fact that obligated parties must accumulate RINs to comply with regulatory requirements, which is not true in other markets.

Given all of these factors, we have decided that the most appropriate action at this time is to collect more data and conduct additional, enhanced market monitoring and analysis. We do not find that the concerns and analytic findings raised to EPA to date warrant restructuring the RIN market at this time. We do not agree with comments that we should at this time restrict elements of the RIN market, such as who can participate in the market and how long parties can hold RINs, since we have seen no data-based evidence that anti-competitive behavior has occurred. We conclude that such restrictions could adversely impact liquidity and other market functions and would only be warranted if additional monitoring identified anti-competitive behavior that could be managed with such market-wide restrictions. As such, we agree with comments that the RIN market should be allowed to continue operating at this time without additional restrictions while concerns related to anti-competitive behavior should be studied more closely.

Therefore, in this action, we are only finalizing the two reforms (*i.e.,* Reforms 1 and 5) that we believe will enhance our data collection and market monitoring capabilities. We are not taking final action at this time with regard to the other three proposed reforms. We intend to continue to study whether such reforms could benefit the market or, conversely, could have unintended negative consequences.

C. Reform 1: Public Disclosure If RIN Holdings Exceed Certain Threshold

We proposed a requirement for public disclosure when a party's RIN holdings

[225] The RTC document is available in the docket for this action.

[226] For a thorough review of historical RIN price data, see Section III.B of the NPRM preamble (84 FR 10605–10607, March 21, 2019) and the memorandum, ''RIN Market Assessment,'' available in the docket for this action. Our assessment of RIN price behavior and the rationale behind it remains the same. See also the RTC document for a response to comment related to RIN price behavior.

exceed a certain threshold. The fundamental concept underpinning this reform is that increased transparency can help deter market actors from amassing an excess of separated RINs, which due to the concentration in ownership of available supplies could result in undue influence or market power. This reform could also provide information to market participants about the underlying status of the market. A concentration of separated RINs, if sufficiently large in scope, could be used by a party to manipulate the market by artificially affecting prices in any direction. The most extreme examples of market power are monopolies, but concentration can be a concern even for markets with many participants when only a few control the majority of available supply at any given point in time.

In this action, we are largely finalizing what we proposed for Reform 1, of which public comment was broadly supportive. We are finalizing two thresholds that work in tandem to identify parties that have amassed RINs in excess of normal business practices, which could indicate an intent to assert an inappropriate influence on the market. Under the threshold reform finalized in this action, a RIN-holding party must aggregate its end-of-day separated D6 RIN holdings with those of its corporate affiliates. If the group of affiliates holds aggregated separated D6 RINs on any day in excess of the primary threshold and contains no obligated party, then the group triggers the primary threshold, and each party in the affiliate group must notify EPA of a threshold exceedance at the end of the quarter. If the group of affiliates holds separated D6 RINs in excess of the primary threshold on any day and contains at least one obligated party, then the aggregated RIN holdings are compared to the secondary threshold. If they exceed both the primary and the secondary thresholds, each member in the affiliate group must notify EPA of a threshold exceedance at the end of the quarter. For an affiliated group containing an obligated party that triggers the primary but not the secondary threshold, no notification to EPA is required by the group members.

In this action, we are finalizing a requirement for public disclosure when parties exceed the EPA-set RIN-holding threshold. We are finalizing our proposal in the NPRM that no confidentiality claims may be asserted by any person with respect to the name of a party that reported exceeding an EPA-set RIN holding threshold. Some commenters indicated that releasing a party's name could alert other market participants that the party has a large supply of excess RINs, which could weaken their ability to negotiate RIN price for a transaction. After reviewing these comments and reconsidering the conditions leading up to potential public disclosure, we find that a party concerned about triggering the reporting threshold can keep its RIN holdings at a level such that the public disclosure requirement is not triggered. We believe that the thresholds signify an amount of RINs in excess of normal business practices and will not interfere with RIN holdings that are necessary to reasonably manage compliance with the RFS program. Given the amount of notice we are giving parties, we find any party that chooses after January 1, 2020, to acquire RINs in excess of the thresholds is itself causing an alert to market participants about their RIN holdings and is directly responsible itself for any competitive harm, such as depressed RIN prices, that results. Therefore, no claim of business confidentiality may be asserted by any person with respect to the name of a party that exceeds a RIN holding threshold.

We also received comment in support of a prohibitive limit with a potential enforcement consequence if the threshold were exceeded rather than simply relying on public disclosure as a deterrent to inappropriate market behavior. These commenters worried that public disclosure would have no effect on RIN holdings and that a prohibition would be necessary to affect behavior. We disagree with these comments. Furthermore, we decided that a prohibitive limit could have detrimental effects, especially if not designed properly. Excess market power is very difficult to quantify in any given market, even if regulators have perfect knowledge of all market conditions. A real risk exists of setting a RIN holding threshold in this rulemaking incorrectly. If a threshold is set too low, it could unnecessarily compromise market efficiency and liquidity and interfere with obligated parties' ability to comply with regulations by disincentivizing them from holding the necessary quantity of RINs to meet their RVO. We therefore believe that a threshold with a consequence of public disclosure is appropriate rather than a holding limit with an enforcement consequence. A threshold serves as a deterrent and warning bell without the risk of causing unnecessary harm. We also believe that, in the face of insufficient evidence of any identified parties currently exhibiting what might be considered excessive market power, public disclosure is an appropriate first action.

Under this reform, we are applying the thresholds to D6 RIN holdings only. After considering comments, we conclude that we can limit the scope of this reform to D6 RINs without compromising its intended effect. First, D6 RINs raise the most stakeholder concern because the price of D6 RINs is expected to vary greatly with very low prices for D6 RINs when the implied RFS requirement for conventional biofuel is below the blendwall to the high prices seen in previous years when the implied RFS requirement for conventional biofuel is above the blendwall. Under this unique set of conditions, the D6 RIN market would present a better opportunity than other D-codes were a party to attempt to drive up RIN prices by withholding large amounts of RINs. Conversely, were a party to withhold a large volume of D4 RINs, additional supplies of D4 RINs could enter the market to meet demand at a marginal increase in price. Second, the nested nature of the RVOs and the unique characteristics of other RIN markets (*e.g.,* D3) would make covering all RIN categories considerably more complicated. We are further limiting this measure to separated RINs because we believe the physical storage limitations faced by renewable fuel already reduce the opportunity for price manipulation of assigned RINs and that the existing regulations at 40 CFR 80.1428 already include anti-hoarding provisions for RINs attached to renewable fuel.

We are finalizing a primary threshold of three percent of the total implied conventional biofuel volume requirement set for that year by EPA in the RVO rule, which is the total renewable fuel volume requirement minus the advanced fuel volume requirement (*e.g.,* the primary threshold would have been three percent of 15 billion gallons for compliance year 2018). When we were contemplating this reform for the NPRM, we looked at the linked cap-and-trade programs implemented by California and Quebec as examples. They use a formula that calculates a holding limit of about three percent of their combined annual allowance budgets every year. We received comments that a three percent threshold is appropriate, and several commenters stated that it is too low. We continue to believe that it is low enough to identify parties that have acquired RIN holdings larger than necessary for normal business operations and that may indicate an effort to assert inappropriate market power. On the other hand, given the comments that a

RIN holding threshold set too low could discourage blending and cause harm to parties, we continue to believe that going any lower than three percent would be unwarranted.

We are finalizing a secondary threshold for obligated parties of 130 percent of the individual implied conventional RVOs of all obligated parties in the affiliate group. As stated in comments, we recognize that larger obligated parties with large RVOs have valid reasons to accumulate and hold a volume of RINs that might exceed the primary threshold, not only to meet their next annual compliance obligation but also to bank additional RINs for compliance with the following year's obligation. Therefore, we recognize that the secondary threshold has to account for and allow RINs held to meet compliance obligations. We chose 130 percent because it allows for holdings of 100 percent of their implied conventional biofuel RVO, 20 percent for banking, and 10 percent for additional flexibility and uncertainty. After considering comments, we believe that this 10 percent flexibility is important because it could, for example, cover potentially invalid D6 RINs that may not be sold or retired according to the existing RFS regulations or small changes to gasoline and diesel production and import volumes from one year to another that affect the RIN holding calculations.

We are finalizing an approach to calculating the primary and secondary thresholds that adjusts depending on how many RVOs are in effect.[227] For anytime between April 1 and December 31, when only one set of annual RVOs is in effect, the primary threshold will equal three percent of the annual implied conventional biofuel volume requirement established by EPA in a rule promulgated each year to set the annual renewable fuel standards. In a hypothetical example, this would amount to three percent of 15 billion D6 RINs, or 450 million D6 RINs. In that same period, an obligated party would calculate its secondary threshold by multiplying its gasoline and diesel production and import volume from the prior year by the difference between the obligated party's renewable fuel percentage standard from the prior year and the advanced fuel percentage standard from the prior year and account for any deficit volume it carried over from the prior year. For anytime between January 1 and March 31, when two sets of annual RVOs are in effect, the primary threshold will be three percent of 125 percent of the annual implied conventional biofuel volume requirement. In our hypothetical example, this would amount to three percent of 18.75 billion D6 RINs, or 562.5 million D6 RINs. In that same period, the secondary threshold would be calculated using the obligated party's gasoline and diesel production and import volume from the prior year multiplied by 125 percent of the obligated party's difference between the renewable fuel percentage standard from the prior year and the advanced fuel percentage standard from the prior year and account for any deficit volume it carried over from the prior year. The threshold in the first quarter of the year is 125 percent of the other months because parties may need to hold RINs for two overlapping RVOs in that quarter rather than just one.

Under this reform, two parties are corporate affiliates if one party has more than 20-percent ownership in the other or if both parties are owned more than 20 percent by the same parent company. We chose this ''more than 20'' percent ownership level because it is consistent with the value that the California Cap-and-Trade Program [228] uses to define indirect corporate association and with the value that the Regional Greenhouse Gas Initiative (RGGI) program [229] uses to define corporate association. Those programs are useful points of comparison because they also implement environmental credit programs and monitor their credit markets for anti-competitive behavior. We received no comments on the 20 percent value or providing suggestions for a different value. Only corporate affiliates registered to own RINs in the EPA Moderated Transaction System (EMTS) [230] are included in the RIN holding aggregation. Corporate affiliates that are not registered in EMTS do not need to be included in the threshold calculations as these affiliates cannot hold RINs.

We are finalizing the requirement that each RIN-holding party compare the daily aggregated RIN holdings of its affiliate group with the primary threshold and, if applicable, the secondary threshold. If the relevant threshold is exceeded on any day in the quarter, the affiliate group parties must report the exceedance in their next RIN Activity Report. To be clear, the parties may conduct the required comparison of daily RIN holdings to the thresholds as infrequently as quarterly to comply with the requirements. For example, a party may proceed by noting its separated D6 RIN holdings at the beginning of the quarter then keeping track throughout the quarter of the volume and date of every RIN purchase and sale, as already required under the RFS recordkeeping provisions at 40 CFR 80.1454(i). At the end of the quarter, the party would then compute what the RIN holdings were on each day of the quarter and aggregate those daily numbers with those of its affiliates. On the other hand, parties may choose to conduct the comparison more frequently, such as monthly, weekly, or daily. For example, a party with large RIN holdings that conducts transactions often throughout the month may wish to aggregate its daily RIN holdings with those of its affiliate group members frequently to know when aggregated levels are approaching the relevant threshold and when action might be needed to avoid exceeding the threshold on an upcoming day. After considering comments, we believe that quarterly reporting is an adequate frequency for EPA and public notification of potentially-concerning market power while also appropriately minimizing the calculation burden on parties that feel they are at very low risk of exceeding the relevant threshold.

We are adding a yes/no reporting requirement on exceeding the thresholds to the RIN Activity Report that all RIN-holding parties are already required to submit to EPA quarterly. A party will select ''no'' if the threshold is not exceeded during the given quarter or ''yes'' if it is exceeded at least once in the quarter. We will publish on a quarterly basis only the names of the parties that reported ''yes''. We are also adding a reporting requirement to the RIN Activity Report that RIN-holding parties submit to EPA on RIN-holding corporate affiliates and all contractual

[227] RFS regulations set the compliance deadline for each year at March 31 of the subsequent year. For example, the 2017 compliance deadline (*i.e.,* the deadline for retiring RINs based on 2017 volumes) was March 31, 2018. To continue with the example, in the period between January 1 and March 31, 2018, obligated parties were likely holding 2016 and/or 2017 RINs toward compliance with their 2017 obligations (on or before March 31, 2018) and were also beginning to collect and hold 2018 years toward comply with their 2018 obligations (on or before March 31, 2019). Therefore, during that three-month period, two RVOs are in place.

[228] More information on California's Cap and Trade program can be found at *https://www.arb.ca.gov/cc/capandtrade/capandtrade.htm.*

[229] The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont to cap and reduce CO_2 emissions from the power sector. More information on RGGI can be found at *https://www.rggi.org.*

[230] EMTS was designed to allow companies to report and track RIN transactions under the RFS program.

affiliates.[231] This affiliate information will not be published by EPA. We proposed that the names of these affiliates be reported in a list submitted to EPA by the attest auditor in June following the affected compliance year. Based on comments that annual reporting of affiliates is insufficient and should be required more frequently and on a more thorough assessment of our data system capabilities, we are putting the reporting requirements in the RIN Activity Report rather than the attest engagement report. We believe that RIN-holding corporate affiliate and all contractual affiliate names can help EPA confirm RIN holding calculations, compare aggregated RIN holdings to other threshold levels beyond those finalized in this action, and conduct market oversight. Therefore, we prefer to collect this affiliate information in a more useful format than a hard-coded list attached to an attest report. Furthermore, we want to collect this information as soon as possible while providing parties adequate time to prepare. Since the calculations and recordkeeping requirements will take effect on January 1, 2020, the first yes/no report on exceeding the threshold will be submitted by June 1, 2020, and the auditor findings of that report will be submitted to EPA by June 1, 2021. We prefer to receive the affiliate information by June 1, 2020, rather than in 2021. Therefore, for each quarterly RIN Activity Report submitted after January 1, 2020, each party must enter the names and EPA company IDs of each RIN-holding corporate affiliate and each contractual affiliate from that quarter, regardless of whether they also report exceeding the RIN holding threshold.

We are requiring that the reported contractual affiliates include those that do not own RINs and that are not registered with EPA to own RINs. For example, a party with a contract in place to purchase or hold RINs for a company not registered in EMTS would report that company's name to EPA. Based on comments received, we continue to believe we need a wider picture of contractual affiliations than those in EMTS so that we can maintain some insight into any additional market share over which parties might have control. For example, we will monitor for a non-registered party that has established contracts with multiple parties to purchase and hold a large number of aggregated RINs on its behalf. We will treat these lists as potential CBI and will treat them according to 40 CFR part 2, subpart B, until determined otherwise.

A designated company official will be required to certify the completeness and accuracy of the threshold and affiliate answers upon report submission. In addition, the independent auditor must review threshold calculations during the attest engagement process and include in their attest engagement report to EPA any findings. This includes confirmation that the D6 RIN holdings and RVOs, if applicable, of all corporate affiliates were fully and properly accounted for in the calculations. Therefore, we are requiring that parties registered to hold RINs keep as records all threshold calculations, including corporate affiliate values, and provide those records to the auditor for review.

The calculation finalized in this action uses gasoline and diesel production and import volumes from the prior compliance year as a proxy for volumes in the current year. After considering comments, we recognize that the calculations can be an inaccurate representation of current year volumes in some cases, such as mergers or big changes in import volumes from year to year. Therefore, in response to comments, we are adding alternative provisions to the regulation that obligated parties can use, if specific criteria are met, to account for such discrepancies in their volume calculations. Any party that uses the alternative provisions is required to report the volume it calculated in its RIN Activity Report alongside the other required threshold information.

D. Reform 5: Enhancing EPA's Market Monitoring Capabilities

In this action, we are taking additional steps to enhance our market monitoring capabilities in order to better detect potential market manipulation. Monitoring the RIN market requires a substantial amount of market data. Prior to this action, we have required parties to report RIN trade prices, RIN trade volumes, and the parties involved in the RIN transaction. With this action, we are adding new reporting requirements.

As described in Section III.C, we are requiring parties to report the names of RIN-holding corporate affiliates and all contractual affiliates in their RIN Activity Reports. Since it will be collected in that form, we are not requiring that auditors include affiliate lists in their annual attest engagements submitted to EPA. We are only requiring attest auditors to review the RIN Activity Reports and confirm that the information reported about the threshold analysis and the affiliates was reported correctly. The auditor's findings will be reported to EPA as usual in the findings report.

We are requiring that a per-gallon RIN price be reported for a separated RIN transaction and that a price of $0.00 only be allowed for certain types of transactions. Prior to this action, we have allowed intracompany and tolling agreement transactions to report a RIN price of $0.00. In the proposal, we requested comment on any other legitimate reasons for reporting a $0.00 RIN price. Given the comments received, we are adding consignment transactions and RIN pass-back transactions to the list of transactions allowed to report a RIN price of $0.00.

We are requiring that transactions at a price other than $0.00 be reported as either a spot type or a term type.[232] We believe that collecting this additional information will improve our understanding of the RIN price reported and will allow us to filter term type prices out of the RIN price dataset that we publish and analyze internally for compliance oversight. Thus, the published price will be a better reflection of market prices on a given day.

We also confirm our intention to take non-regulatory steps after promulgation of this action to update business rules in EMTS such that both parties in a RIN transaction must enter the same RIN price in EMTS for the transaction to clear. Prior to this action, EMTS already had a business rule that required both parties in a RIN transaction to enter the same RIN volume, and this business rule has been very helpful in maintaining high quality volume data that we can reliably publish and use for compliance oversight. These and other business rules prevent data entry errors and prompt parties that have not properly followed the instructions in the regulations to correct their numbers. By adding a similar business rule to EMTS on RIN prices, we believe we can prevent reporting errors and improve the quality and reliability of our price data.

Finally, we are affirming our intent to employ a third-party outside of the regulatory process to monitor of the RIN market. We are aware of other environmental commodity markets that employ third-party market monitoring services to conduct analysis of the market, including screening for potential anti-competitive behavior or

[231] As defined in both the proposal and this action, contractual affiliation relates only to contracts for purchasing or holdings RINs and is not factored into the threshold analysis.

[232] EPA considers a spot type to be a transaction at fixed price, fixed quantity, and single delivery. EPA considers a term type as a transaction that isn't fixed price, fixed quantity, or single delivery.

market manipulation. For example, the Western Climate Initiative, Inc. provides administrative services to the linked cap and trade programs in Quebec and California, including managing a contract with a company that provides independent marketing monitoring for the jurisdictions. Quebec and California each maintain market monitoring capabilities to oversee the joint market. In addition, RGGI contracts with a third party to monitor its carbon dioxide (CO_2) allowance trading market and produce and publish quarterly and annual reports summarizing their findings. Based on comments received, we continue to believe additional RIN market oversight and monitoring from an independent third party can serve as a deterrent to manipulative behavior and increase market transparency, enabling the market to more easily function as designed. We intend to access a third-party market monitor after promulgation of this action through a standard contract mechanism, which requires contractor employees to maintain the same CBI safeguards as EPA employees.

E. Other Reforms Proposed But Not Finalized at This Time

In the NPRM, we proposed regulations related to three other reforms that were included in the President's Directive. Under Reform 2, we proposed that obligated parties would be required to retire 80 percent of their renewable fuel RVO after the first three quarters of the reporting year. Under Reform 3, we proposed that only certain non-obligated parties would be allowed to purchase separated D6 RINs, including exporters and those with a contract in place to supply obligated parties with RINs. Under Reform 4, we proposed that the number of D6 RINs a non-obligated party separated or purchased in a quarter would need to equal the number of D6 RINs it sold or retired in that same quarter. We sought comment on the potential benefits as well as potential downsides of these three reforms.

After reviewing the comments received, we have decided not to take final action with respect to the proposed regulatory amendments. In the NPRM, we explained that we have not seen any data-based evidence that market manipulation is occurring and that we were proposing the reforms to prevent market manipulation from possibly taking root in the future. We also emphasized that we were proceeding carefully because of the potential for these reforms to cause harm to the RIN market. Nothing in the comments received provides any additional data-based evidence or compelling information that alters the assessment of market manipulation we presented in the NPRM. Therefore, we are finalizing Reforms 1 and 5, which will provide additional data for EPA to analyze and discourage excessive RIN holdings. If, after reviewing that data and conducting additional market analysis, we determine that it would be prudent to finalize Reform 2, 3, or 4 in the future, we will share the analysis that has led us to believe it could be appropriate and will allow time for parties to respond, through a separate notice to the public and an additional period provided for public comment, before we proceed with a final rule codifying one or more of these proposed reforms. To that end, we have not further summarized or responded to comments on these three reforms in this action.

F. RIN Market Reform Economic Impacts

As EPA is finalizing just Reforms 1 and 5 in this action, the impacts of this action are expected to be increased transparency and minor costs associated with recordkeeping and reporting requirements. If EPA were to proceed further and finalize Reforms 2, 3, or 4, the agency would evaluate those impacts in the associated regulatory action(s).

1. Benefits of RIN Market Reform

The goals of the reforms finalized in this action are to increase our capability to monitor the market for anti-competitive behavior as well as to discourage RIN holding levels in excess of normal business practices. Therefore, we believe the net benefit of this action will be to support increased confidence in the RIN market and reduce perceived market risk. These reforms also provide the added benefit of increasing transparency into the RIN market. In general, commodities markets function optimally when all participants have access to as much information as possible, and this information is disseminated or shared with all parties at the same time. This helps create a level playing field and minimize any potential advantage one party may have over another. The net benefit of greater transparency helps market participants, such as obligated parties, plan short- and long-term strategies to manage their compliance costs.

2. Costs of RIN Market Reform

As detailed in Sections III.C and D, we are requiring additional reporting and recordkeeping for obligated parties under the RFS program and non-obligated parties that participate in the RIN market. As detailed in Section III.E, because we are not finalizing Reforms 2, 3, and 4 at this time, including the reporting and recordkeeping requirements proposed in association with those reforms, we expect modest costs to regulated entities associated with this final rule.[233] Specifically, we only anticipate minimal costs associated with reporting and recordkeeping requirements related to RIN holdings, affiliated parties, and any other data elements EPA collects as informed by Reforms 1 and 5. Therefore, we believe this action will not significantly affect RIN prices or market participation.

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 a significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review. Any changes made in response to OMB recommendations have been documented in the docket.

B. Executive Order 13771: Reducing Regulations and Controlling Regulatory Costs

This action is considered an Executive Order 13771 regulatory action. Details on the estimated costs of this final rule can be found in Sections II.G.2 and III.F.2.

C. Paperwork Reduction Act (PRA)

With respect to the E15 1-psi waiver portion of this action, no new information collection burden is imposed under the PRA. OMB has previously approved the information collection activities contained in the existing regulations and has assigned OMB control number 2060–0675. The changes to the regulations will remove a small segment of language on PTDs required to be generated and kept as records by parties that make and distribute gasoline under the regulations at 40 CFR part 80, subpart N. These changes will not require any additional information from regulated parties nor do we believe that these changes will substantively alter practices used by regulated parties to satisfy the PTD regulatory requirements.

The information collection activities related to the RIN market reform portion of this rule have been submitted for

[233] For a quantitative breakdown of new recordkeeping and reporting burden imposed by this action, see ''Final Rule ICR Detailed Burden Tables'' and ''Final Rule ICR Supporting Statement'' materials in the docket for this action.

approval to OMB under the PRA. The Information Collection Request (ICR) document that EPA prepared has been assigned EPA ICR number 2592.01. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here.

This ICR includes all additional RFS related information collection activities resulting from the Modifications to Fuel Regulations to Provide Flexibility for E15; Modifications to RFS RIN Market Regulations final rulemaking. These information collection activities include new recordkeeping and reporting requirements finalized under 40 CFR part 80, subpart M.

Respondents/affected entities: The respondents to this information collection fall into the following general industry categories: Petroleum refineries, ethyl alcohol manufacturers, other basic organic chemical manufacturing, chemical and allied products merchant wholesalers, petroleum bulk stations and terminals, petroleum and petroleum products merchant wholesalers, gasoline service stations, and marine service stations.

Respondent's obligation to respond: Mandatory.

Estimated number of respondents: 22,119.

Frequency of response: Quarterly, annually.

Total estimated burden: 240,375 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: $22,652,928 (per year).

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 OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9.

D. 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. Small entities that will be subject to the final rulemaking include domestic refiners that produce gasoline and/or diesel. In addition to domestic refiners, EPA believes the final rulemaking will also apply to other small entities. These entities include: Non-obligated parties under the RFS program that transact RINs; blenders that separate RINs from assigned volumes of renewable fuel; and brokers that facilitate transactions of RINs between parties. With respect to the E15 1-psi waiver portion of this action, the regulatory changes do not substantively alter the regulatory requirements on parties that make and distribute gasoline. Additionally, the interpretation to allow E15 to receive the 1-psi waiver will allow parties that make and distribute E15, including small entities, more flexibility in the summer to satisfy market demands. With respect to the RIN market reform provisions of this action, we have conducted a screening analysis to assess whether we should make a finding that this action will not have a significant economic impact on a substantial number of small entities.[234] As detailed in that analysis, the administrative recordkeeping and reporting burden imposed by the final rulemaking suggests minimal impacts to all entities, including non-obligated parties under the RFS program.

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of $100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. This action implements mandates specifically and explicitly set forth in CAA sec. 211 and we believe that this action represents the least costly, most cost-effective approach to achieve the statutory requirements.

F. 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.

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

This action does not have tribal implications as specified in Executive Order 13175. Consistent with the EPA Policy on Consultation and Coordination with Indian Tribes, EPA consulted with tribal officials during the development of this action. On February 28, 2019, EPA met with the National Tribal Air Association to highlight the upcoming proposed rulemaking. EPA did not receive any feedback at this consultation meeting or in subsequent comments.

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

EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that 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.

I. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not a ''significant energy action'' because it is not likely to have a significant adverse effect on the supply, distribution or use of energy. The flexibility provided to E15 by this action will enable additional supply of energy but are not expected to have an immediate significant effect on supply, distribution, or use of energy. The modifications to the RFS compliance system are not expected to have a significant effect on supply, distribution, or use of energy.

J. National Technology Transfer and Advancement Act (NTTAA)

This rulemaking does not involve technical standards.

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

EPA believes that this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low income populations, and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994). As discussed in Section II.F, we do not believe that this action will have any meaningful environmental impacts (positive or negative).

L. Congressional Review Act (CRA)

This action is subject to the CRA, and EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

V. Statutory Authority

Statutory authority for this action comes from section 211 of the Clean Air Act, 42 U.S.C. 7545. Additional support for the procedural and compliance related aspects of this rule comes from sections 114, 208, and 301(a) of the Clean Air Act, 42 U.S.C. 7414, 7542, and 7601(a).

[234] See ''Screening Analysis for the Final Modifications to RFS RIN Market Regulations,'' available in the docket for this action.

List of Subjects in 40 CFR Part 80

Environmental protection, Fuel additives, Gasoline, Labeling, Motor vehicle pollution, Penalties, Reporting and recordkeeping requirements.

Dated: May 30, 2019.

Andrew R. Wheeler,

Administrator.

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

Appendix—Definition: Substantially Similar

EPA will treat any gasoline-ethanol blend containing more than 10 but no more than 15 volume percent ethanol (''E15''), and denatured fuel ethanol used to make such a gasoline-ethanol blended fuel for use by any person in light-duty vehicles manufactured after model year 2001 [1] as substantially similar to any unleaded gasoline or gasoline additive utilized in the certification of any light-duty motor vehicle under sections 206 and 213(a) of the Clean Air Act with certification fuel in accordance with 40 CFR 86.113–15 if the following criteria are met.

(1) *Fuel composition criteria.* The E15 must contain carbon, hydrogen, and oxygen, nitrogen, and/or sulfur, exclusively,[2] in the form of some combination of the following:

(a) Hydrocarbons;

(b) Denatured fuel ethanol that meets the specifications of ASTM International Standard D4806–19;

(c) Additional fuel additive(s) [3] at a concentration of no more than 1.0 percent by volume which contributes no more than 3 ppm sulfur by weight to the finished fuel; and

(d) The gasoline-ethanol blended fuel, denatured fuel ethanol, and any additives blended into the fuel must contain only carbon, hydrogen, and any one or all of the following elements: Oxygen, nitrogen, and/or sulfur.[4]

(2) *Physical and chemical characteristics criteria.* The gasoline-ethanol blended fuel must possess all of the following:

(a) The physical and chemical characteristics of an unleaded automotive spark-ignition engine fuel (*i.e.,* unleaded gasoline) as specified in ASTM International Standard D4814–19 for at least one of the United States Seasonal and Geographical Volatility Classes specified in the standard;

(b) The applicable distillation temperature limitations listed in the Vapor Pressure and Distillation Class Requirements as specified in ASTM International Standard D4814–19; and

(c) The gasoline-ethanol blended fuel does not exceed 9.0 pounds per square inch (psi) RVP during the time period from May 1 to September 15.[5]

(3) *Misfueling mitigation criteria.* Fuel and fuel additive manufacturers that introduce E15 or ethanol for use in the manufacture of E15 must take reasonable precautions to mitigate the misfueling of vehicles, engines, and equipment not covered by this definition (*i.e.,* anything other than a model year 2001 and newer light-duty vehicle). Fuel and fuel additive manufacturers must submit to EPA a plan, for EPA's approval, and must fully implement that EPA-approved plan, prior to introduction of E15 or ethanol for use in the manufacture of E15 into commerce. The plan must include provisions that will implement all reasonable precautions for ensuring that the E15 is only introduced into commerce for use in model year 2001 and newer light-duty vehicles. The plan must be sent to the following address: Director, Compliance Division, U.S. Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Mail Code 6405J, Washington, DC 20460.

(4) Failure to fully fulfill any criteria of this definition means the fuel or fuel additive introduced into commerce is not covered by this definition.

Amendments to Regulations

For the reasons set forth in the preamble, EPA amends 40 CFR part 80 as follows:

PART 80—REGULATION OF FUEL AND FUEL ADDITIVES

■ 1. The authority citation for part 80 continues to read as follows:

Authority: 42 U.S.C. 7414, 7521, 7542, 7545, and 7601(a).

Subpart B—Controls and Prohibitions

■ 2. Section 80.27 is amended by revising paragraph (d)(2) to read as follows:

§ 80.27 Controls and prohibitions on gasoline volatility.

* * * * *

(d) * * *

(2) In order to qualify for the special regulatory treatment specified in paragraph (d)(1) of this section, gasoline must contain denatured, anhydrous ethanol. The concentration of the ethanol, excluding the required denaturing agent, must be at least 9% and no more than 15% (by volume) of the gasoline. The ethanol content of the gasoline shall be determined by the use of one of the testing methodologies specified in § 80.47. The maximum ethanol content shall not exceed any applicable waiver conditions under section 211(f) of the Clean Air Act.

* * * * *

■ 3. Section 80.28 is amended by revising paragraphs (g)(6)(iii), (g)(8) introductory text, and (g)(8)(ii) as follows:

§ 80.28 Liability for violations of gasoline volatility controls and prohibitions.

* * * * *

(g) * * *

(6) * * *

(iii) That the gasoline determined to be in violation contained no more than 15% ethanol (by volume) when it was delivered to the next party in the distribution system.

* * * * *

(8) In addition to the defenses provided in paragraphs (g)(1) through (6) of this section, in any case in which an ethanol blender, distributor, reseller, carrier, retailer, or wholesale purchaser-consumer would be in violation under paragraph (b), (c), (d), (e), or (f) of this section, as a result of gasoline which contains between 9 and 15 percent ethanol (by volume) but exceeds the applicable standard by more than one pound per square inch (1.0 psi), the ethanol blender, distributor, reseller, carrier, retailer or wholesale purchaser-consumer shall not be deemed in violation if such person can demonstrate, by showing receipt of a certification from the facility from which the gasoline was received or other evidence acceptable to the Administrator, that:

* * * * *

(ii) The ethanol portion of the blend does not exceed 15 percent (by volume); and

* * * * *

Subpart M—Renewable Fuel Standard

■ 4. Section 80.1401 is amended by adding in alphabetical order definitions for ''Contractual affiliate,'' ''Corporate affiliate,'' ''Corporate affiliate group,'' ''DX RIN,'' and ''End of Day'' to read as follows:

§ 80.1401 Definitions.

* * * * *

Contractual affiliate means one of the following:

(1) Two parties are contractual affiliates if they have an explicit or implicit agreement in place for one to

[1] This definition does not apply to model year 2000 and older light-duty motor vehicles, heavy-duty gasoline engines and vehicles, on and off-highway motorcycles, and nonroad engines, vehicles, and equipment.

[2] Impurities that produce gaseous combustion products (*i.e.,* products which exist as a gas at Standard Temperature and Pressure) may be present in the fuel at trace levels. An impurity is a substance that is present through unintentional contamination, or remains naturally, after normal processing of the fuel is completed, including where applicable processing that attempted to remove such impurities.

[3] For the purposes of this interpretative rule, the term ''fuel additive'' refers only to that part of the additive package that is not hydrocarbon.

[4] Impurities which produce gaseous combustion products may be present in the fuel additive at trace levels.

[5] Gasoline-ethanol blended fuels containing more than 10 and no more than 15 volume percent ethanol may have an RVP of 1.0 psi greater than the applicable RVP limitations set under section 211(h)(1) of the Act as allowed under section 211(h)(4) of the Act.

purchase or hold RINs on behalf of the other or to deliver RINs to the other. This other party may or may not be registered under the RFS program.

(2) Two parties are contractual affiliates if one RIN-owning party purchases or holds RINs on behalf of the other. This other party may or may not be registered under the RFS program.

* * * * *

Corporate affiliate means one of the following:

(1) Two RIN-holding parties are corporate affiliates if one owns or controls ownership of more than 20 percent of the other.

(2) Two RIN-holding parties are corporate affiliates if one parent company owns or controls ownership of more than 20 percent of both.

Corporate affiliate group means a group of parties in which each party is a corporate affiliate to at least one other party in the group.

* * * * *

DX RIN means a RIN with a D code of X, where X is the D code of the renewable fuel as identified under § 80.1425(g), generated under § 80.1426, and submitted under § 80.1452. For example, a D6 RIN is a RIN with a D code of 6.

* * * * *

End of day means 7:00 a.m. Coordinated Universal Time (UTC).

* * * * *

■ 5. Section 80.1402 is added to read as follows:

§ 80.1402 Availability of information; confidentiality of information.

(a) Beginning January 1, 2020, no claim of business confidentiality may be asserted by any person with respect to information submitted to EPA under § 80.1451(c)(2)(ii)(E), whether submitted electronically or in paper format. EPA may make information submitted under § 80.1451(c)(2)(ii)(E) available to the public.

(b) [Reserved]

■ 6. Section 80.1435 is added to read as follows:

§ 80.1435 How are RIN holdings and RIN holding thresholds calculated?

Beginning January 1, 2020, any party that holds RINs must comply with the requirements of this section.

(a) *RIN holdings calculation.* (1) Each party must calculate daily end-of-day separated D6 RIN holdings by aggregating its end-of-day separated D6 RIN holdings with the end-of-day separated D6 RIN holdings of all corporate affiliates in a corporate affiliate group and use the end-of-day separated D6 RIN holdings as specified in paragraph (b) of this section.

(2) Each party must calculate, as applicable, the holdings-to-market percentage under paragraph (b)(1) of this section and the holdings-to-obligation percentage under paragraph (b)(2) of this section quarterly in accordance with the schedule specified in Table 1 to § 80.1451.

(3) For a corporate affiliate group containing at least one obligated party that has a holdings-to-market percentage greater than 3.00 percent for any calendar day in a compliance period, as determined under paragraph (b)(1) of this section, each party must calculate the corporate affiliate group's holdings-to-obligation percentage as specified in paragraph (b)(2) of this section.

(4) Each party must individually keep copies of all calculations and supporting information for separated D6 RIN holding threshold calculations required under this section as specified in § 80.1454(u).

(b) *RIN holding thresholds calculations.* (1) *Primary test calculations.* For each day in a compliance period, each party that owns RINs must calculate the holdings-to-market percentage for their corporate affiliate group using the method specified in paragraph (b)(1)(i) or (b)(1)(ii) of this section, as applicable.

(i) For each day beginning January 1 through March 31, calculate the holdings-to-market percentage for a corporate affiliate group as follows:

$$HTMP_d = [(\Sigma D6RIN_d)_a/(CNV\_VOL_{TOT,i} * 1.25)] * 100$$

Where:

$HTMP_d$ = The holdings-to-market percentage is the percentage of separated D6 RINs a corporate affiliate group holds on calendar day d relative to the total expected number of separated D6 RINs in the market in compliance period i, in percent.

d = A given calendar day.

i = The compliance period, typically expressed as a calendar year.

a = Individual corporate affiliate in a corporate affiliate group.

$(\Sigma D6RIN_d)_a$ = Sum of the number of separated D6 RINs each individual corporate affiliate a holds at the end of calendar day d, in RIN-gallons.

$CNV\_VOL_{TOT,i}$ = The total expected annual volume of conventional renewable fuels for the compliance period i, in gallons. Unless otherwise specified, this number is 15 billion gallons.

(ii) For each day beginning April 1 through December 31, calculate the holdings-to-market percentage for a corporate affiliate group as follows:

$$HTMP_d = [(\Sigma D6RIN_d)_a/(CNV\_VOL_{TOT,i})] * 100$$

Where:

$HTMP_d$ = The holdings-to-market percentage is the percentage of separated D6 RINs a corporate affiliate group holds on calendar day d relative to the total expected number of separated D6 RINs in the market in compliance period i, in percent.

d = A given calendar day.

i = The compliance period, typically expressed as a calendar year.

a = Individual corporate affiliate in a corporate affiliate group.

$(\Sigma D6RIN_d)_a$ = Sum of the number of separated D6 RINs each individual corporate affiliate a holds at the end of calendar day d, in RIN-gallons.

$CNV\_VOL_{TOT,i}$ = The total expected annual volume of conventional renewable fuels for compliance period i, in gallons. Unless otherwise specified, this number is 15 billion gallons.

(2) *Secondary threshold calculations.* For each day in a compliance period where a corporate affiliate group is required to calculate with the secondary threshold requirement under paragraph (a)(3) of this section, each party must calculate the holdings-to-obligation percentage for their corporate affiliate group using the methods at paragraph (b)(2)(i) or (b)(2)(ii) of this section, as applicable.

(i) For each day beginning January 1 through March 31, calculate the holdings-to-obligation percentage as follows:

$$HTOP_d = [(\Sigma D6RIN_d)_a/\{[(\Sigma CNV\_RVO_{i-1})_a + (\Sigma CNV\_DEF_{i-1})_a + (\Sigma CNV\_DEF_{i-2})_a] * 1.25\}] * 100$$

Where:

$HTOP_d$ = The holdings-to-obligation percentage is the percentage of separated D6 RINs a corporate affiliate group holds on calendar day d relative to their expected separated D6 RIN holdings based on the corporate affiliate group's conventional RVO for compliance period i-1, in percent.

d = A given calendar day.

i = The compliance period, typically expressed as a calendar year.

a = Individual corporate affiliate in a corporate affiliate group.

$(\Sigma D6RIN_d)_a$ = Sum of the number of separated D6 RINs each individual corporate affiliate a holds on calendar day d, in RIN-gallons.

$(\Sigma CNV\_RVO_{i-1})_a$ = Sum of the conventional RVOs for each individual corporate affiliate a for compliance period i-1 as calculated in paragraph (b)(2)(iii) of this section, in RIN-gallons.

$(\Sigma CNV\_DEF_{i-1})_a$ = Sum of the conventional deficits for each individual corporate affiliate a as calculated in paragraph (b)(2)(iv) of this section for compliance period i-1, in RIN-gallons.

$(\Sigma CNV\_DEF_{i-2})_a$ = Sum of the conventional deficits for each individual corporate affiliate a as calculated in paragraph (b)(2)(iv) of this section for compliance period i-2, in RIN-gallons.

(ii) For each day beginning April 1 through December 31, calculate the

holdings-to-obligation percentage as follows:

$$HTOP_d = \{(\Sigma D6RIN_d)_a/[(\Sigma CNV\_RVO_{i-1})_a + (\Sigma CNV\_DEF_{i-1})_a]\} * 100$$

Where:

$HTOP_d$ = The holdings-to-obligation percentage is the percentage of separated D6 RINs a corporate affiliate group holds on calendar day d relative to their expected separated D6 RIN holdings based on the corporate affiliate group's conventional RVO for compliance period i-1, in percent.

d = A given calendar day.

i = The compliance period, typically expressed as a calendar year.

a = Individual corporate affiliate in a corporate affiliate group.

$(\Sigma D6RIN_d)_a$ = Sum of the number of separated D6 RINs each individual corporate affiliate a holds on calendar day d, in RIN gallons.

$(\Sigma CNV\_RVO_{i-1})_a$ = Sum of the conventional RVOs for each individual corporate affiliate a for compliance period i-1 as calculated in paragraph (b)(2)(iii) of this section, in RIN-gallons.

$(\Sigma CNV\_DEF_{i-1})_a$ = Sum of the conventional deficits for each individual corporate affiliate a as calculated in paragraph (b)(2)(iv) of this section for compliance period i-1, in RIN-gallons.

(iii) As needed to calculate the holdings-to-obligation percentage in paragraphs (b)(2)(i) and (b)(2)(ii) of this section, calculate the conventional RVO for an individual corporate affiliate as follows:

$$CNV\_RVO_i = \{[RFStd_{RF,i} * (GV_i + DV_i)]—[RFStd_{AB,i} * (GV_i + DV_i)]\} + ERVO_{RF,i}$$

Where:

CNV_RVO_i = The conventional RVO for an individual corporate affiliate for compliance period i without deficits, in RIN-gallons.

i = The compliance period, typically expressed as a calendar year.

$RFStd_{RF,i}$ = The standard for renewable fuel for compliance period i determined by EPA pursuant to § 80.1405, in percent.

$RFStd_{AB,i}$ = The standard for advanced biofuel for compliance period i determined by EPA pursuant to § 80.1405, in percent.

GV_i = The non-renewable gasoline volume, determined in accordance with § 80.1407(b), (c), and (f), which is produced in or imported into the 48 contiguous states or Hawaii by an obligated party for compliance period i, in gallons.

DV_i = The non-renewable diesel volume, determined in accordance with § 80.1407(b), (c), and (f), which is produced in or imported into the 48 contiguous states or Hawaii by an obligated party for compliance period i, in gallons.

$ERVO_{RF,i}$ = The sum of all renewable volume obligations from exporting renewable fuels, as calculated under § 80.1430, by an obligated party for compliance period i, in RIN-gallons.

(iv) As needed to calculate the holdings-to-obligation percentage in paragraphs (b)(2)(i) and (b)(2)(ii) of this section, calculate the conventional deficit for an individual corporate affiliate as follows:

$$CNV\_DEF_i = D_{RF,i}—D_{AB,i}$$

Where:

CNV_DEF_i = The conventional deficit for an individual corporate affiliate for compliance period i, in RIN-gallons. If a conventional deficit is less than zero, use zero for conventional deficits in paragraphs (b)(2)(i) and (b)(2)(ii) of this section.

i = The compliance period, typically expressed as a calendar year.

$D_{RF,i}$ = Deficit carryover from compliance period i for renewable fuel, in RIN-gallons.

$D_{AB,i}$ = Deficit carryover from compliance period i for advanced biofuel, in RIN-gallons.

(c) *Exceeding the D6 RIN holding thresholds.* (1) *Primary threshold test.* A non-obligated party or corporate affiliate group that does not contain an obligated party and that has a holdings-to-market percentage greater than 3.00 percent for any calendar day in a compliance period, as determined under paragraph (b)(1) of this section, has exceeded the primary threshold.

(2) *Secondary threshold test.* Any party or corporate affiliate group required to calculate a holdings-to-obligation percentage under paragraph (a)(3) of this section and that has a holdings-to-obligation percentage greater than 130.00 percent for any calendar day in a compliance period, as determined under paragraph (b)(2) of this section, has exceeded the secondary threshold.

(d) *Alternative gasoline and diesel production volume allowance.* Parties that must calculate the secondary threshold under paragraph (b)(2) of this section may use alternative gasoline and diesel production volumes if all the following requirements are met:

(1) The party must have a reasonable basis for using the alternative production numbers (*e.g.,* selling or acquiring a refinery or a shutdown of a refinery).

(2) When substituting the alternative production volume for the conventional RVO volume, the party must use actual production numbers for any completed quarter in the compliance period and extrapolated production numbers for any future quarters.

(3) The party must meet the applicable recordkeeping requirements of § 80.1454.

(4) The party must retain documentation of the reasonable basis and the calculations used and must provide these to the auditor conducting the attest engagement under § 80.1464.

(e) *Exemption from aggregation requirements.* (1) A party may claim exemption from the requirement to aggregate D6 RIN holdings for any affiliate where one or more of the following apply:

(i) There is an absence of common trading-level control and information sharing with the affiliate.

(ii) The sharing of information regarding aggregation with the affiliate could lead either party to violate state or Federal law, or the law of a foreign jurisdiction.

(iii) The affiliate is exempt from the regulations regarding commodities and securities exchanges under 17 CFR 150.4(b)(7).

(2) A party must retain detailed, explanatory documentation supporting its exemption and must provide this documentation to the attest auditor under § 80.1464, and to EPA upon request. Such records include, but are not limited to, the following:

(i) Documents that reflect that the parties do not have knowledge of the trading decisions of the other.

(ii) Documents that demonstrate that there are developed and independent trading systems in place.

(iii) Documents that demonstrate that the parties have and enforce written procedures to preclude each from having knowledge of, gaining access to, or receiving data about, trades of the other.

(iv) Documents reflective of the risk management and other systems in place.

(v) Documents that support an exemption under 17 CFR 150.4(b)(7).

(vi) Any other documents that support the applicability of the exemption.

■ 7. Section 80.1451 is amended by:

■ a. Revising paragraph (c)(2) introductory text;

■ d. Redesignating paragraphs (c)(2)(i) through (xviii) as paragraphs (c)(2)(i)(A) through (R); and

■ e. Adding new paragraphs (c)(2)(i) introductory text and (c)(2)(ii).

The revision and additions read as follows:

§ 80.1451 What are the reporting requirements under the RFS program?

* * * * *

(c) * * *

(2) RIN activity reports must be submitted to EPA according to the schedule specified in paragraph (f)(2) of this section. Each report must summarize RIN activities for the reporting period, separately for RINs

separated from a renewable fuel volume and RINs assigned to a renewable fuel volume.

(i) For compliance periods ending on or before December 31, 2019, each report must include all of the following information:

* * * * *

(ii) For compliance periods starting on or after January 1, 2020, each report must include all of the following information:

(A) The submitting party's name.

(B) The submitting party's EPA-issued company identification number.

(C) Primary registration designation or compliance level for compliance year (*e.g.,* ''Aggregated Refiner,'' ''Exporter,'' ''Renewable Fuel Producer,'' ''RIN Owner Only,'' etc.).

(D) All of the following information:

(*1*) The number of current-year RINs owned at the start of the quarter.

(*2*) The number of prior-year RINs owned at the start of the quarter.

(*3*) The total current-year RINs purchased.

(*4*) The total prior-year RINs purchased.

(*5*) The total current-year RINs sold.

(*6*) The total prior-year RINs sold.

(*7*) The total current-year RINs retired.

(*8*) The total current-year RINs retired that are invalid as defined in § 80.1431(a).

(*9*) The total prior-year RINs retired.

(*10*) The total prior-year RINs retired that are invalid as defined in § 80.1431(a).

(*11*) The number of current-year RINs owned at the end of the quarter.

(*12*) The number of prior-year RINs owned at the end of the quarter.

(*13*) The number of RINs generated.

(*14*) The volume of renewable fuel (in gallons) owned at the end of the quarter.

(E)(*1*) Indicate if the submitting party or the submitting party's corporate affiliate group exceeded the primary threshold for any day in the quarter under § 80.1435(c)(1). If the submitting party is in an affiliate group that does not contain an obligated party, and the affiliate group has exceeded the primary threshold, then EPA may publish the name and EPA-issued company identification number of the submitting party.

(*2*) Indicate if the submitting party or the submitting party's corporate affiliate group exceeded the secondary threshold for any day in the quarter under § 80.1435(c)(2). If the submitting party is an obligated party and has exceeded the secondary threshold or is in a corporate affiliate group containing an obligated party that has exceeded the secondary threshold, then EPA may publish the name and EPA-issued company identification number of the submitting party.

(F) A list of all corporate and contractual affiliates during the reporting period. For each affiliate, include the identification information (including the EPA company ID number, if registered) and the affiliate type.

(G) The RVO used to calculate D6 RIN threshold, if alternative gasoline and diesel production volumes were used under § 80.1435(d).

(H) A list of contractual affiliates that had a contract with the party that did not result in transfer of RINs to the party during the reporting period.

(I) Any additional information that the Administrator may require.

* * * * *

■ 8. Section 80.1452 is amended by:

■ a. Revising paragraph (c)(12); and

■ b. Adding paragraph (c)(15).

The revision and addition read as follows:

§ 80.1452 What are the requirements related to the EPA Moderated Transaction System (EMTS)?

* * * * *

(c) * * *

(12)(i) For transactions through December 31, 2019, the per gallon RIN price or the per-gallon price of renewable fuel with RINs included.

(ii) For transactions on or after January 1, 2020:

(A) For RIN buy or sell transaction types including assigned RINs, the per-gallon RIN price or the per-gallon price of renewable fuel with RINs included.

(B) For RIN buy or sell transaction types including separated RINs, the per-gallon RIN price.

* * * * *

(15) For buy or sell transactions of separated RINs on or after January 1, 2020, the mechanism used to purchase the RINs (*e.g.,* spot market or fulfilling a term contract).

* * * * *

■ 9. Section 80.1454 is amended by adding paragraphs (i)(1) and (2) and (u) and (v) to read as follows:

§ 80.1454 What are the recordkeeping requirements under the RFS program?

* * * * *

(i) * * *

(1) For buy or sell transactions of separated RINs, parties must retain records substantiating the price reported to EPA under § 80.1452.

(2) For buy or sell transactions of separated RINs on or after January 1, 2020, parties must retain records demonstrating the transaction mechanism (*e.g.,* spot market or fulfilling a term contract).

* * * * *

(u) *Requirements for recordkeeping of RIN holdings for all parties transacting or owning RINs.* (1) Starting January 1, 2020, parties must retain records related to end-of-day separated D6 RIN holdings, and any associated calculations recorded in order to meet the RIN holdings requirements described in § 80.1435 for a period of at least five years. Such records must include information related to any corporate affiliates, contractual affiliates, and their RIN holdings and calculations.

(2) Parties must retain records related to their reports to EPA regarding threshold compliance under §§ 80.1435 and 80.1451 for a period of at least five years.

(v) *Requirements for recordkeeping of contractual and corporate affiliates.* (1) Parties must retain records including, but not limited to, the name, address, business location, contact information, and description of relationship, for each RIN-holding corporate affiliate for a period of at least five years. For the corporate affiliate group, a relational diagram.

(2) Parties must retain records including, but not limited to, the name, address, business location, contact information, and contract or other agreement for each contractual affiliate for a period of at least five years.

(3) If a party claims an exemption from aggregation under § 80.1435(e), the party must retain all records in support of the exemption for a period of at least five years and must provide these records to the attest auditor under § 80.1464, and to EPA upon request.

■ 10. Section 80.1464 is amended by adding paragraphs (a)(4) through (6), (b)(5) through (7), and (c)(3) through (5) to read as follows:

§ 80.1464 What are the attest engagement requirements under the RFS program?

(a) * * *

(4) *RIN holdings.* (i) Obtain and read copies of the RIN holdings calculations performed under § 80.1435 for the party and any corporate affiliates and the applicable database, spreadsheet, or other documentation the party maintains.

(ii) Select sample calculations in accordance with the guidelines in § 80.127; compute and report as a finding the results of these calculations and verify that the results agree with the values reported to EPA.

(iii) Identify any date(s) where the aggregated calculation exceeded the RIN holding threshold(s) specified in

§ 80.1435. Compute and state as a finding whether this information agrees with the party's reports (notification of threshold exceedance) to EPA.

(5) *Affiliates.* Review reports and records related to corporate and contractual affiliates and state whether this information agrees with the party's reports to EPA, and report as a finding any exceptions.

(6) *Exemption.* Review and confirm the existence of records supporting an exemption from aggregation claimed by the party under § 80.1435(e), and report as a finding any exceptions.

(b) * * *

(5) *RIN holdings.* (i) Obtain and read copies of the RIN holdings calculations performed under § 80.1435 for the party and any corporate affiliates and the applicable database, spreadsheet, or other documentation the party maintains.

(ii) Select sample calculations in accordance with the guidelines in § 80.127; compute and report as a finding the results of these calculations and verify that the results agree with the values reported to EPA.

(iii) Identify any date(s) where the aggregated calculation exceeded the RIN holding threshold(s) specified in § 80.1435. Compute and state as a finding whether this information agrees with the party's reports (notification of threshold exceedance) to EPA.

(6) *Affiliates.* Review reports and records related to corporate and contractual affiliates and state whether this information agrees with the party's reports to EPA, and report as a finding any exceptions.

(7) *Exemption.* Review and confirm the existence of records supporting an exemption from aggregation claimed by the party under § 80.1435(e), and report as a finding any exceptions.

* * * * *

(c) * * *

(3) *RIN holdings.* (i) Obtain and read copies of the RIN holdings calculations performed under § 80.1435 for the party and any corporate affiliates and the applicable database, spreadsheet, or other documentation the party maintains.

(ii) Select sample calculations in accordance with the guidelines in § 80.127; compute and report as a finding the results of these calculations and verify that the results agree with the values reported to EPA.

(iii) Identify any date(s) where the aggregated calculation exceeded the RIN holding threshold(s) specified in § 80.1435. Compute and state as a finding whether this information agrees with the party's reports (notification of threshold exceedance) to EPA.

(4) *Affiliates.* Review reports and records related to corporate and contractual affiliates and state whether this information agrees with the party's reports to EPA, and report as a finding any exceptions.

(5) *Exemption.* Review and confirm the existence of records supporting an exemption from aggregation claimed by the party under § 80.1435(e), and report as a finding any exceptions.

* * * * *

Subpart N—Additional Requirements for Gasoline-Ethanol Blends

■ 11. Section 80.1503 is amended by:

■ a. Revising paragraph (a)(1)(vi)(B);

■ b. Removing paragraph (a)(1)(vi)(C);

■ c. Revising paragraph (b)(1)(vi)(B); and

■ d. Removing paragraphs (b)(1)(vi)(C) through (E).

The revisions read as follows:

§ 80.1503 What are the product transfer document requirements for gasoline-ethanol blends, gasolines, and conventional blendstocks for oxygenate blending subject to this subpart?

(a) * * *

(1) * * *

(vi) * * *

(B) The conspicuous statement that the gasoline being shipped contains ethanol and the percentage concentration of ethanol as described in § 80.27(d)(3).

* * * * *

(b) * * *

(1) * * *

(vi) * * *

(B)(*1*) For gasoline containing less than 9 volume percent ethanol, the following statement: ''EX—Contains up to X% ethanol. The RVP does not exceed [fill in appropriate value] psi.'' The term X refers to the maximum volume percent ethanol present in the gasoline.

(*2*) The conspicuous statement that the gasoline being shipped contains ethanol and the percentage concentration of ethanol as described in § 80.27(d)(3) may be used in lieu of the statement required under paragraph (b)(1)(vi)(B)(*1*) of this section.

* * * * *

§ 80.1504 [Amended]

■ 12. Section 80.1504 is amended by removing and reserving paragraphs (f) and (g).

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