No. 19-____

IN THE

Supreme Court of the United States

VALERO ENERGY CORPORATION AND
AMERICAN FUEL & PETROCHEMICAL MANUFACTURERS,
Petitioners,

v.

ENVIRONMENTAL PROTECTION AGENCY,
Respondent.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the District of Columbia Circuit

PETITION FOR A WRIT OF CERTIORARI
VOLUME II OF II

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TABLE OF CONTENTS

VOLUME I

VOLUME II

APPENDIX D

U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF TRANSPORTATION AND AIR QUALITY

ASSESSMENT AND STANDARDS DIVISION

EPA-420-R-16-019

Renewable Fuel Standard Program Standards For 2017 And Biomass-Based Diesel Volume For 2018: Response To Comments

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NOVEMBER 2016

[Content Omitted]

In the proposed rule, EPA did not propose any changes to the definition of an obligated party, nor did we specifically seek comment on this issue. EPA received comments requesting that we change the point of obligation in the RFS program primarily from parties that are obligated under the current regulations. We also received comments from several parties opposed to changing the point of obligation. These comments are beyond the scope of this rulemaking.

In a separate action EPA has proposed to deny the petitions we have received to change the point of obligation in the RFS program. EPA has opened a public

docket (EPA-HQ-OAR-2016-0544) to receive comments on our proposed denial of these petitions.[72] Our proposed response to the petitions we have received, together with the petitions, comments received to-date on the petitions, and EPA's draft analysis can also be found in this docket.

[Content Omitted]

[72] The EPA Administrator signed the Proposed Denial of Petitions for Rulemaking to Change the RFS Point of Obligation on November 10, 2016. More information about this proposed rule can be found at https://www.epa.gov/renewable-fuel-standard-program/response-petitions-reconsideration-rfs2-rule-change-point-obligation

APPENDIX E

ENVIRONMENTAL PROTECTION AGENCY
40 CFR Part 80

[EPA–HQ–OAR–2016–0004; FRL–9955–84–OAR]
RIN 2060–AS72

Renewable Fuel Standard Program: Standards for 2017 and Biomass-Based Diesel Volume for 2018

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule [December 12, 2016].

SUMMARY: Under section 211 of the Clean Air Act, the Environmental Protection Agency (EPA) is required to set renewable fuel percentage standards every year. This action establishes the annual percentage standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel that apply to all motor vehicle gasoline and diesel produced or imported in the year 2017. Relying on statutory authority that is available when projected cellulosic biofuel production volumes are less than the applicable volume specified in the statute, the EPA is setting volume requirements for cellulosic biofuel, advanced biofuel, and total renewable fuel that are below the statutory applicable volumes, but which are nevertheless significantly higher than past requirements. The final rule also establishes the four percentage standards applicable to obligated parties, namely producers and importer of gasoline and diesel, based on the corresponding volume requirements. The final standards

are expected to continue driving the market to overcome constraints in renewable fuel distribution infrastructure, which in turn is expected to lead to substantial growth over time in the production and use of renewable fuels. In this action, we are also establishing the applicable volume of biomass-based diesel for 2018.

DATES: This final rule is effective on February 10, 2017.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2016–0004. All documents in the docket are listed on the *http://www.regulations.gov* Web site. 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, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through *http:// www.regulations.gov.*

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SUPPLEMENTARY INFORMATION:
Entities potentially affected by this final rule are those involved with the production, distribution, and sale of transportation fuels, including gasoline and diesel fuel or renewable fuels such as ethanol, biodiesel, renewable diesel, and biogas. Potentially regulated categories include:

Category	NAICS[1] codes	SIC[2] codes	Examples of potentially regulated 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	221210	4925	Manufactured gas production and distribution.
Industry	454319	5989	Other fuel dealers.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this final action. This table lists the types of entities that EPA is now aware could potentially be regulated by this final action. Other types of entities not listed in the table could also be regulated. To determine whether your entity would be regulated by this final action, you should carefully examine the applicability criteria in 40 CFR part 80. If you have any questions regarding the applicability of this final action to a particular entity, consult the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

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[1] North American Industry Classification System (NAICS).

[2] Standard Industrial Classification (SIC) system code.

Outline of This Preamble

I. Executive Summary

The Renewable Fuel Standard (RFS) program began in 2006 pursuant to the requirements in Clean Air Act (CAA) section 211(o) that were added through the Energy Policy Act of 2005 (EPAct). The statutory requirements for the RFS program were subsequently modified through the Energy Independence and Security Act of 2007 (EISA), resulting in the publication of major revisions to the regulatory requirements on March 26, 2010.[1] EISA's stated goals include moving the United States toward "greater energy independence and security, to increase the production of clean renewable fuels." Today, nearly all of the approximately 142 billion gallons of gasoline used for transportation purposes contains 10 percent ethanol (E10), and a substantial portion of diesel fuel contains biodiesel.

Renewable fuels represent an opportunity for the U.S. to move away from fossil fuels towards a set of lower lifecycle GHG transportation fuels, and the RFS program provides incentives for these lower lifecycle GHG fuels to grow and compete in the market. While renewable fuels include non-advanced (conventional) corn starch ethanol, which is the predominant renewable fuel in use to date, Congress envisioned the majority of growth from 2014 forward to come from advanced biofuels, as the conventional volumes remain constant in the statutory volume tables starting in 2015 while the advanced volumes continue to grow.[2]

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[1] 75 FR 14670, March 26, 2010.

[2] In this document we follow the common practice of using the term "conventional" renewable fuel to mean any renewable fuel that is not an advance biofuel.

The statute includes annual volume targets, and requires EPA to translate those volume targets (or alternative volume requirements established by EPA in accordance with statutory waiver authorities) into compliance obligations that refiners and importers must meet every year. In this action, we are establishing the annual percentage standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel that would apply to all gasoline and diesel produced or imported in 2017. We are also establishing the applicable volume of biomass-based diesel for 2018.

The standards we are setting are designed to achieve the Congressional intent of increasing renewable fuel use over time in order to reduce lifecycle GHG emissions of transportation fuels and increase energy security, while at the same time accounting for the real-world challenges that have slowed progress toward these goals. Those challenges have made the volume targets established by Congress for 2017 beyond reach for all fuel categories other than biomass-based diesel (BBD), for which the statute specifies only a minimum requirement of 1.0 billion gallons. In setting these standards for 2017, we have used the cellulosic waiver authority provision provided by Congress to establish volume requirements that will be lower than the statutory targets for fuels other than biomass-based diesel, but nevertheless represent significant growth from past years.

The 2017 volume requirements for advanced biofuel and total renewable fuel are higher than the levels we proposed in the NPRM, reflecting our assessment of updated information and a review of comments received. We are also finalizing the proposed volume requirement for BBD for 2018. This BBD volume requirement will continue to provide support for the

BBD industry, and we expect that larger volumes of this fuel type are likely to be used to comply with the advanced biofuel requirement. The final volume requirements are shown in Table I–1 below. These final volumes, when considered together with the volumes established over the past several years of the RFS program, indicate that the RFS program is working to deliver steady, ambitious growth in the total amount of renewable fuel produced and used in the United States, consistent with Congressional intent.

TABLE I–1—PROPOSED AND FINAL VOLUME REQUIREMENTS[a]

	2017		2018	
	Proposed	Final	Proposed	Final
Cellulosic biofuel (million gallons)	312	311	n/a	n/a
Biomass-based diesel (billion gallons)	[b]2.0	[b]2.0	2.1	2.1
Advanced biofuel (billion gallons)	4.0	4.28	n/a	n/a
Renewable fuel (billion gallons)	18.8	19.28	n/a	n/a

Despite significant increases in renewable fuel use in the United States, real-world constraints, such as the slower than expected development of the cellulosic biofuel industry and constraints in the marketplace related to supply of certain biofuels to consumers, have made the timeline laid out by Congress for the growth

[a] All values are ethanol-equivalent on an energy content basis, except for BBD which is biodiesel-equivalent.

[b] The 2017 BBD volume requirement was established in the 2014–2016 final rule (80 FR 77420, December 14, 2015).

in renewable fuel use (other than for BBD) impossible to achieve. These challenges continue, and are largely the same for 2017 as they were for 2016. However, a careful review of the comments we received in response to the May 31, 2016 Notice of Proposed Rulemaking (NPRM) and other information that has become available since May has led us to conclude that volume reductions for 2017 need not be as great as we had proposed. In light of the lower reductions necessary, in this final rule we rely exclusively on the cellulosic waiver authority to provide reductions in both advanced biofuel and total renewable fuel volumes. That is, we have determined that it is not necessary to provide an additional increment of volume reduction for total renewable fuels through use of the general waiver authority based on a finding of inadequate domestic supply, as we had done in the final rule establishing annual standards for 2014–2016 ("Renewable Fuel Standard Program: Standards for 2014, 2015, and 2016 and Biomass-Based Diesel Volume for 2017," (hereinafter referred to as the "2014–2016 final rule"),[3] and as we also proposed to do in establishing standards for 2017.[4]

We believe that the RFS program can and will drive renewable fuel use, and we have considered the ability of the market to respond to the standards we set when we assessed the amount of renewable fuel that can be reasonably attained in 2017. Therefore, while this final rule applies the tools Congress provided to make adjustments to the statutory volume targets in recognition of the constraints that exist today, we believe the standards we are setting in this action will drive growth in renewable fuels, particularly advanced biofuels,

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[3] 80 FR 77420, December 14, 2015.

[4] 81 FR 34778, May 31, 2016.

which achieve substantial lifecycle GHG emissions. In our view, while Congress recognized that supply challenges may exist as evidenced by the waiver provisions, it did not intend growth in the renewable fuels market to be stopped by those challenges, including those associated with the "E10 blendwall."[5] The fact that Congress chose to mandate increasing and substantial amounts of renewable fuel clearly signals that it intended the RFS program to create incentives to increase renewable fuel supplies and overcome constraints in the market. The standards we are setting in this action will provide those incentives.

The standards we are setting in this final rule are part of a collection of actions, in both the government and private sectors, to increase the use of renewable fuels. In addition to ongoing efforts to evaluate new pathways for RIN generation for advanced biofuels, we have recently proposed regulatory provisions that we believe will enhance the ability of the market to increase not only the production of advanced and cellulosic biofuels, but also the use of higher-level ethanol blends such as E15 and E85.[6] DOE and USDA are continuing to provide funds for the development of new technologies and expansion of infrastructure for higher ethanol blends, and the ethanol industry has also made efforts to expand the use of higher ethanol blends

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[5] The "E10 blendwall" represents the volume of ethanol that can be consumed domestically if all gasoline contains 10% ethanol and there are no higher-level ethanol blends consumed such as E15 or E85.

[6] See the recently proposed Renewables Enhancement and Growth Support (REGS) Rule (81 FR 80828, November 16, 2016). More information about this proposed rule can be found at *https://www.epa.gov/renewable-fuel-standard-program/proposed-renewables-enhancement-and-growth-support-regs-rule.*

through its Prime the Pump program. These actions are expected to continue to help clear hurdles to support the ongoing growth in the use of renewable fuels in future years.

A. Purpose of This Action

The national volume targets of renewable fuel that are intended to be achieved under the RFS program each year (absent an adjustment or waiver by EPA) are specified in CAA section 211(o)(2). The statutory volumes for 2017 are shown in Table I.A–1. The cellulosic biofuel and BBD categories are nested within the advanced biofuel category, which is itself nested within the total renewable fuel category. This means, for example, that each gallon of cellulosic biofuel or BBD that is used to satisfy the individual volume requirements for those fuel types can also be used to satisfy the requirements for advanced biofuel and total renewable fuel.

TABLE I.A–1—APPLICABLE 2017 VOLUMES SPECIFIED IN THE CLEAN AIR ACT

[Billion Gallons][a]	
Cellulosic biofuel	5.5
Biomass-based diesel	≥1.0
Advanced biofuel	9.0
Renewable fuel	24.0

Under the RFS program, EPA is required to determine and publish annual percentage standards for each compliance year. The percentage standards are calculated to ensure use in transportation fuel of the national "applicable volumes" of the four types of bio-

[a] All values are ethanol-equivalent on an energy content basis, except values for BBD which are given in actual gallons.

fuel (cellulosic biofuel, BBD, advanced biofuel, and total renewable fuel) that are set forth in the statute or established by EPA in accordance with the Act's requirements. The percentage standards are used by obligated parties (generally, producers and importers of gasoline and diesel fuel) to calculate their individual compliance obligations. Each of the four percentage standards is applied to the volume of non-renewable gasoline and diesel that each obligated party produces or imports during the specified calendar year to determine their individual volume obligations with respect to the four renewable fuel types. The individual volume obligations determine the number of RINs of each renewable fuel type that each obligated party must acquire and retire to demonstrate compliance.

EPA is establishing the annual applicable volume requirements for cellulosic biofuel, advanced biofuel, and total renewable fuel for 2017, and for BBD for 2018.[7] Table I.A–2 lists the statutory provisions and associated criteria relevant to determining the national applicable volumes used to set the percentage standards in this final rule.

[7] The 2017 BBD volume requirement was established in the 2014–2016 final rule.

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TABLE I.A–2—STATUTORY PROVISIONS FOR DETERMINATION OF APPLICABLE VOLUMES

Applicable volumes	Clean air act reference	Criteria provided in statute for determination of applicable volume
Cellulosic biofuel	211(o)(7)(D)(i)	Required volume must be lesser of volume specified in CAA 211(o)(2)(B)(i)(III) or EPA's projected volume.
	211(o)(7)(A)	EPA in consultation with other federal agencies may waive the statutory volume in whole or in part if implementation would severely harm the economy or environment of a State, region, or the United States, or if there is an inadequate domestic supply.
Biomass-based diesel[8]	211(o)(2)(B)(ii) and (v)	Required volume for years after 2012 must be at least 1.0 billion gallons, and must be based on a review of implementation of the program, coordination with other federal agencies, and an analysis of specified factors.
	211(o)(7)(A)	EPA in consultation with other federal agencies may waive the statutory volume in whole or in part if implementation would severely harm the economy or environment of a State, region, or the United States, or if there is an inadequate domestic supply.
Advanced biofuel	211(o)(7)(D)(i)	If applicable volume of cellulosic biofuel is reduced below the statutory volume to the projected volume, EPA may reduce the advanced biofuel and total renewable fuel volumes in CAA 211(o)(2)(B)(i)(I) and (II) by the same or lesser volume. No criteria specified.
	211(o)(7)(A)	EPA in consultation with other federal agencies may waive the statutory volume in whole or in part if implementation would severely harm the economy or environment of a State, region, or the United States, or if there is an inadequate domestic supply.
Total renewable fuel	211(o)(7)(D)(i)	If applicable volume of cellulosic biofuel is reduced below the statutory volume to the projected volume, EPA may reduce the advanced biofuel and total renewable fuel volumes in CAA 211(o)(2)(B)(i)(I) and (II) by the same or lesser volume. No criteria specified.
	211(o)(7)(A)	EPA in consultation with other federal agencies may waive the statutory volume in whole or in part if implementation would severely harm the economy or environment of a State, region, or the United States, or if there is an inadequate domestic supply.

[8] Section 211(o)(7)(E) also authorizes EPA in consultation with other federal agencies to issue a temporary waiver of applicable volumes of BBD where there is a significant feedstock disruption or other market circumstance that would make the price of BBD fuel increase significantly.

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As shown in Table I.A–2, the statutory authorities allowing EPA to modify or set the applicable volumes differ for the four categories of renewable fuel. Under the statute, EPA must annually determine the projected volume of cellulosic biofuel production for the following year. If the projected volume of cellulosic biofuel production is less than the applicable volume specified in section 211(o)(2)(B)(i)(III) of the statute, EPA must lower the applicable volume used to set the annual cellulosic biofuel percentage standard to the projected production volume. In Section III of this final rule, we present our analysis of cellulosic biofuel production and the final applicable volume for 2017. This analysis is based on information provided by the Department of Energy's Energy Information Administration (EIA), an evaluation of producers' production plans and progress to date following discussions with cellulosic biofuel producers, and is informed by comments we received in response to the NPRM.

With regard to BBD, Congress chose to set aside a portion of the advanced biofuel standard for BBD, and CAA section 211(o)(2)(B) specifies the applicable volumes of BBD to be used in the RFS program only through year 2012. For subsequent years the statute sets a minimum volume of 1 billion gallons, and directs EPA, in coordination with the U.S. Departments of Agriculture (USDA) and Energy (DOE), to determine the required volume after review of implementation of the renewable fuels program and consideration of a number of factors. The BBD volume requirement must be established 14 months before the year in which it will apply. In the 2014–2016 final rule we established the BBD volume for 2017. In Section VI of this preamble we discuss our assessment of statutory and other relevant factors and our final volume requirement for BBD for 2018, which has been developed in coordina-

tion with USDA and DOE. We are increasing the required volume of BBD so as to provide continued support to that important contributor to the pool of advanced biofuel while at the same time setting the volume requirement in a manner anticipated to provide continued incentive for the development of other types of advanced biofuel.

Regarding advanced biofuel and total renewable fuel, Congress provided several mechanisms through which those volumes could be reduced if necessary. If we reduce the applicable volume of cellulosic biofuel below the volume specified in CAA section 211(o)(2)(B)(i)(III), we also have the authority to reduce the applicable volumes of advanced biofuel and total renewable fuel by the same or a lesser amount. We refer to this as the "cellulosic waiver authority." We may also reduce the applicable volumes of any of the four renewable fuel types using the "general waiver authority" provided in CAA section 211(o)(7)(A) if EPA, in consultation with USDA and DOE, finds that implementation of the statutory volumes would severely harm the economy or environment of a State, region, or the United States, or if there is inadequate domestic supply. Sections II, IV, and V of this final rule describe our use of the cellulosic waiver authority alone to reduce volumes of advanced biofuel and total renewable fuel, and our assessment that the resulting volumes are reasonably attainable. As described in the NPRM, and consistent with the views that we expressed in the 2014–2016 final rule, we continue to believe that reductions in the statutory targets for 2017 are necessary. However, in light of our review of updated information and consideration of comments, we are making those reductions under the cellulosic waiver authority alone and are not finalizing an additional increment of reduction for total renewable fuel based on a finding of inadequate domes-

tic supply under the general waiver authority as we had proposed. Despite the reductions we are finalizing today, we continue to be mindful that the primary objective of the statute is to increase renewable fuel use over time. While progress has taken longer than Congress anticipated, we note that today's rule provides for 15 billion gallons of conventional renewable fuel, the implied level envisioned under the statute for 2017, while also providing for a substantial increase in the required volume of advanced biofuel over past volume requirements.

B. Summary of Major Provisions in This Action

This section briefly summarizes the major provisions of this final rule. We are establishing applicable volume requirements and associated percentage standards for cellulosic biofuel, advanced biofuel, and total renewable fuel for 2017, as well as the percentage standard for BBD for 2017, and the applicable volume requirement for BBD for 2018.

1. Approach to Setting Volume Requirements

The approach we have taken in this final rule is essentially the same as that presented in the NPRM and in the 2014–2016 final rule with regard to establishing the cellulosic biofuel volume requirement, and the use of the cellulosic waiver authority to reduce advanced biofuel and total renewable fuel. However, it differs in that we have not found it necessary to also use the general waiver authority to provide an additional increment of reduction with respect to total renewable fuel. While in the NPRM we proposed to determine the maximum reasonably achievable supply of total renewable fuel, consistent with the general waiver authority's "inadequate domestic supply" crite-

rion, in this final rule we have instead identified the total renewable fuel volume that results from use of the cellulosic waiver authority, and have determined that this volume of total renewable fuel is reasonably attainable. In this assessment, we took into account the same constraints in the supply of renewable fuel we noted in the NPRM, but have come to a different result with respect to necessary volume reductions in light of updated information and consideration of comments.

Section II provides a general description of our approach to setting volume requirements in today's rule, including a review of the statutory waiver authorities and our consideration of carryover RINs. Section III provides our assessment of the 2017 cellulosic biofuel volume based on a projection of production that reflects a neutral aim at accuracy. Sections IV and V describe our assessment of reasonably attainable volumes of advanced biofuel and total renewable fuel, respectively. Finally, Section VI provides our determination regarding the 2018 BBD volume requirement, and reflects an analysis of a set of factors stipulated in CAA section 211(o)(2)(B)(ii).

2. Cellulosic Biofuel

In the past several years the cellulosic biofuel industry has continued to make progress towards increased commercial scale production. Cellulosic biofuel production reached record levels in 2015, driven largely by compressed natural gas (CNG) and liquefied natural gas (LNG) derived from biogas, and is expected to exceed these volumes in 2016. Cellulosic ethanol, while produced in much smaller quantities than CNG/LNG derived from biogas, was produced consistently on a commercial scale for the first time in 2015. Cellulosic ethanol production levels increased from existing facil-

ities in 2016, and significant work continues to be done to enable the production of cellulosic ethanol at new facilities in 2017 and beyond. Available data suggest that the production levels for both cellulosic CNG/LNG and cellulosic ethanol in 2016 will exceed by a significant margin the levels produced in 2015. In this rule we are establishing a cellulosic biofuel volume requirement of 311 million ethanol-equivalent gallons for 2017 based on the information we have received regarding individual facilities' capacities, production start dates and biofuel production plans, information received in public comments, input from other government agencies, and EPA's own engineering judgment.

As part of estimating the volume of cellulosic biofuel that will be made available in the U.S. in 2017, we considered all potential production sources by company and facility. This included facilities still in the commissioning or start-up phases, as well as facilities already producing some volume of cellulosic biofuel.[9] From this universe of potential cellulosic biofuel sources, we identified the subset that is expected to produce commercial volumes of qualifying cellulosic biofuel for use as transportation fuel, heating oil, or jet fuel by the end of 2017. To arrive at projected volumes, we collected relevant information on each facility. We then developed projected production ranges based on factors such as the status of the technology being used, progress towards construction and production goals, facility registration status, production volumes achieved, and other significant factors that could poten-

[9] Facilities primarily focused on research and development (R&D) were not the focus of our assessment, as production from these facilities represents very small volumes of cellulosic biofuel, and these facilities typically have not generated RINs for the fuel they have produced.

tially impact fuel production or the ability of the produced fuel to qualify for cellulosic biofuel Renewable Identification Numbers (RINs). We also used this information to group these companies based on production history and to select a value within the aggregated projected production ranges that we believe best represents the most likely production volume from each group of companies in 2017. Further discussion of these factors and the way they were used to determine our final cellulosic biofuel projection for 2017 can be found in Section III.

3. Advanced Biofuel

The conditions that compelled us to reduce the 2016 volume requirement for advanced biofuel below the statutory target remain relevant in 2017. As for 2016, we investigated the ability of volumes of non-cellulosic advanced biofuels to backfill unavailable volumes of cellulosic biofuel in 2017, through domestic production or import. We took into account the substantial GHG emissions reduction required of advanced biofuels, the various constraints on supply of advanced biofuels, the ability of the standards we set to bring about market changes in the time available, and the potential impacts associated with diverting some feedstocks from current use to the production of biofuel. Based on these considerations and review of the comments received in response to the NPRM and other information that has become available, we have determined that a portion of the shortfall in cellulosic biofuel may appropriately be backfilled with advanced biofuel. We are exercising our cellulosic waiver authority to reduce the statutory applicable volume of advanced biofuel to a final volume requirement of 4.28 billion gallons for 2017. This is somewhat higher than the proposed level of 4.0 billion gallons. The applicable volume for advanced bio-

fuel that we are establishing for 2017 will result in significant volume growth over the volume requirement for 2016, and will require the use of more non-cellulosic advanced biofuel (3.97 billion gallons) than would have been required under the statutory targets (3.50 billion gallons).

4. Total Renewable Fuel

Following our determination of the appropriate volume reduction for advanced biofuel for 2017 using the cellulosic waiver authority, we applied the same volume reduction to the statutory target for total renewable fuel, resulting in a volume requirement of 19.28 billion gallons. We then evaluated this total renewable fuel volume to determine if it is reasonably attainable given assessments of attainable volumes of individual fuel types, including biodiesel, renewable diesel, ethanol (in the form of E10 or higher ethanol blends such as E15 or E85, taking into account demand for E0), and other renewable fuels. Based on comments received in response to the NPRM and other information that has become available, we have determined that a total renewable fuel volume of 19.28 billion gallons is reasonably attainable in 2017. There is, therefore, no need to use the general waiver authority to further reduce the total renewable fuel volume requirement due to a finding of inadequate domestic supply.[10]

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[10] The general waiver authority can also be used under a determination that the RFS volumes would cause "severe economic or environmental harm." As described in Section II.A.2 and in more detail in the response to comments document accompanying this rule, EPA does not believe that the record supports a finding of severe economic or environmental harm with respect to the volume requirements we are finalizing today.

5. Biomass-Based Diesel

In EISA, Congress specified increasing applicable volumes of BBD through 2012. Beyond 2012 Congress stipulated that EPA, in coordination with other agencies, was to establish the BBD volume taking into consideration implementation of the program to date and various specified factors, providing that the required volume for BBD could not be less than 1.0 billion gallons. For 2013, EPA established an applicable volume of 1.28 billion gallons. For 2014 and 2015 we established the BBD volume requirement to reflect the actual volume for each of these years of 1.63 and 1.73 billion gallons.[11] For 2016 and 2017, we set the BBD volume requirements at 1.9 and 2.0 billion gallons respectively.

Given current and recent market conditions, the advanced biofuel volume requirement is driving the use of biodiesel and renewable diesel volumes over and above volumes required through the separate BBD standard, and we expect this to continue. Nevertheless, we continue to believe for 2018 that it is appropriate to set increasing BBD applicable volumes to provide a floor to support continued investment to enable increased production and use of BBD. In doing so we also believe in the importance of maintaining opportunities within the advanced biofuel requirement for growth in other types of advanced biofuel, such as renewable diesel co-processed with petroleum, renewable gasoline blend stocks, and renewable heating oil, as well as others that are under development.

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[11] The 2015 BBD standard was based on actual data for the first 9 months of 2015 and on projections for the latter part of the year for which data on actual use was not available at the time.

Thus, based on a review of the implementation of the program to date and all the factors required under the statute, and in coordination with USDA and DOE, we are finalizing an increase in the applicable volume of BBD by 100 million gallons, to 2.1 billion gallons for 2018. We believe that this increase will support the overall goals of the program while also maintaining the incentive for development and growth in production of other advanced biofuels. Establishing the volumes at this level will encourage BBD producers to manufacture higher volumes of fuel that will contribute to the advanced biofuel and total renewable fuel requirements, while also leaving considerable opportunity within the advanced biofuel mandate for investment in and growth in production of other types of advanced biofuel with comparable or potentially superior environmental or other attributes.

6. Annual Percentage Standards

The renewable fuel standards are expressed as a volume percentage and are used by each producer and importer of fossil-based gasoline or diesel to determine their renewable fuel volume obligations. The percentage standards are set so that if each obligated party meets the standards, and if EIA projections of gasoline and diesel use for the coming year prove to be accurate, then the amount of renewable fuel, cellulosic biofuel, BBD, and advanced biofuel actually used will meet the volume requirements used to derive the percentage standards, required on a nationwide basis.

Four separate percentage standards are required under the RFS program, corresponding to the four separate renewable fuel categories shown in Table I.A–1. The specific formulas we use in calculating the renewable fuel percentage standards are contained in the regulations at 40 CFR 80.1405. The percentage stand-

ards represent the ratio of renewable fuel volume to projected non-renewable gasoline and diesel volume. The volume of transportation gasoline and diesel used to calculate the final percentage standards was provided by the Energy Information Administration (EIA). The final percentage standards for 2017 are shown in Table I.B.6–1. Detailed calculations can be found in Section VII, including the projected gasoline and diesel volumes used.

TABLE I.B.6–1—FINAL 2017 PERCENTAGE STANDARDS

Cellulosic biofuel	0.173%
Biomass-based diesel	1.67%
Advanced biofuel	2.38%
Renewable fuel	10.70%

7. Assessment of Aggregate Compliance

By November 30 of each year we are required to assess the status of the aggregate compliance approach to land-use restrictions under the definition of renewable biomass for both the U.S. and Canada. In today's action we are providing the final announcements for these administrative actions.

As part of the RFS regulations, EPA established an aggregate compliance approach for renewable fuel producers who use planted crops and crop residue from U.S. agricultural land. This compliance approach relieved such producers (and importers of such fuel) of the individual recordkeeping and reporting requirements otherwise required of producers and importers to verify that such feedstocks used in the production of renewable fuel meet the definition of renewable biomass. EPA determined that 402 million acres of U.S. agricultural land was available in 2007 (the year of EISA enactment) for production of crops and crop

residue that would meet the definition of renewable biomass, and determined that as long as this total number of acres is not exceeded, it is unlikely that new land has been devoted to crop production based on historical trends and economic considerations. We indicated that we would conduct an annual evaluation of total U.S. acreage that is cropland, pastureland, or conservation reserve program land, and that if the value exceeds 402 million acres, producers using domestically grown crops or crop residue to produce renewable fuel would be subject to individual recordkeeping and reporting to verify that their feedstocks meet the definition of renewable biomass. As described in Section VIII.A, based on data provided by the USDA and using the methodology in place since 2014, we have estimated that U.S. agricultural land totaled approximately 380 million acres in 2016 and thus did not exceed the 2007 baseline acreage. This assessment means that the aggregate compliance provision can continue to be used in the U.S. for calendar year 2017.

On September 29, 2011, EPA approved the use of a similar aggregate compliance approach for planted crops and crop residue grown in Canada. The Government of Canada utilized several types of land use data to demonstrate that the land included in their 124 million acre baseline is cropland, pastureland or land equivalent to U.S. Conservation Reserve Program land that was cleared or cultivated prior to December 19, 2007, and was actively managed or fallow and non-forested on that date (and is therefore RFS2 qualifying land). As described in Section VIII.B, based on data provided by Canada, we have estimated that Canadian agricultural land totaled approximately 118.4 million acres in 2016 and thus did not exceed the 2007 baseline acreage. This assessment means that the aggregate com-

pliance provision can continue to be used in Canada for calendar year 2017.

II. Authority and Need For Waiver of Statutory Applicable Volumes

The statute provides the EPA with the authority to reduce volume requirements below the applicable volume targets specified in the statute under specific circumstances. This section discusses those authorities and our use of the cellulosic waiver authority alone to set 2017 volume requirements for cellulosic biofuel, advanced biofuel, and total renewable fuel that are below the statutory volume targets.

A. Statutory Authorities for Reducing Volume Targets

In CAA section 211(o)(2), Congress specified increasing annual volume targets for total renewable fuel, advanced biofuel, and cellulosic biofuel for each year through 2022, and for biomass-based diesel through 2012, and authorized EPA to set volume requirements for subsequent years in coordination with USDA and DOE, and after consideration of specified factors. However, Congress also recognized that under certain circumstances it would be appropriate for EPA to set volume requirements at a lower level than reflected in the statutory volume targets, and thus provided waiver provisions in CAA section 211(o)(7).

1. Cellulosic Waiver Authority

Section 211(o)(7)(D)(i) of the CAA provides that if EPA determines that the projected volume of cellulosic biofuel production for a given year is less than the applicable volume specified in the statute, that EPA must reduce the applicable volume of cellulosic biofuel required to the projected production volume for that

calendar year. In making this projection, EPA must take a "neutral aim at accuracy." *API* v. *EPA,* 706 F.3d 474 (D.C. Cir. 2013). Pursuant to this provision, EPA has set the cellulosic biofuel requirement lower than the statutory volumes for each year since 2010. As described in Section III.D, the projected volume of cellulosic biofuel production for 2017 is less than the 5.5 billion gallon volume target in the statute. Therefore, for 2017, we are setting the cellulosic biofuel volume requirement at a level lower than the statutory applicable volume, in accordance with this provision.

Section 211(o)(7)(D)(i) also provides that "[f]or any calendar year in which the Administrator makes . . . a reduction [in cellulosic biofuel volumes], the Administrator may also reduce the applicable volume of renewable fuel and advanced biofuels . . . by the same or a lesser volume." Using this authority, the reductions in total renewable fuel and advanced biofuel can be less than or equal to, but no more than, the amount of reduction in the cellulosic biofuel volume. EPA used this authority to reduce applicable volumes of advanced biofuel in 2014–16, and to reduce the total renewable fuel volumes in those years by an equal amount. We refer to authority in Section 211(o)(7)(D)(i) to waive volumes of advanced and total renewable fuel as the "cellulosic waiver authority."

The cellulosic waiver authority was discussed by the United States Court of Appeals for the District of Columbia Circuit, in the context of its consideration of a judicial challenge to the rule establishing the 2013 annual RFS standards. As the court explained,

> The Clean Air Act provides that if EPA reduces the cellulosic biofuel requirement, as it did here, then it 'may also reduce' the advanced biofuel and total renewable fuel quotas

> 'by the same or a lesser volume.' 42 U.S.C. 7545(o)(7)(D)(i). There is no requirement to reduce these latter quotas, nor does the statute prescribe any factors that EPA must consider in making its decision. *See id.* In the absence of any express or implied statutory directive to consider particular factors, EPA reasonably concluded that it enjoys broad discretion regarding whether and in what circumstances to reduce the advanced biofuel and total renewable fuel volumes under the cellulosic waiver provision. *Monroe* v. *EPA,* 750 F.3d 909, 915 (D.C. Cir. 2014).

Some stakeholders have commented that EPA may only exercise the cellulosic waiver authority to reduce total and advanced volumes in circumstances described in CAA section 211(o)(7)(A) (that is, where there is inadequate domestic supply or severe harm to the environment or economy), or that it must in using the cellulosic waiver authority consider the factors specified in section 211(o)(2)(B)(ii) that are required considerations when EPA sets applicable volumes for years in which the statute does not do so. Contrary to these comments, the Court found in the *Monroe* case that the statute does not prescribe any factors that EPA must consider in making is decision; EPA has broad discretion under 211(o)(7)(D)(i) to determine when and under what circumstances to reduce the advanced and total renewable fuel volumes when it reduces the statutory applicable volume of cellulosic biofuel.

When using the cellulosic waiver authority, we believe that there would be substantial justification to exercise our discretion to lower volumes of total and advanced biofuels in circumstances where there are questions regarding the sufficiency of production or

import of potentially qualifying renewable fuels, and where there is evidence of constraints that would limit the ability of those biofuels to be used for purposes specified in the Act (*i.e.,* in transportation fuel, heating oil, or jet fuel). In addition, we believe that it is appropriate in exercising the cellulosic waiver authority for EPA to consider the Congressional objectives reflected in the volumes tables in the statute, and the environmental objectives that generally favor the use of advanced biofuels over non-advanced biofuels. For example, in light of the larger GHG emissions reductions required for advanced biofuels as compared to conventional biofuel, and the Congressional objective to dramatically increase their use in the time period between 2015 and 2022, we believe that it is generally appropriate for reasonably attainable volumes of advanced biofuel that are sourced in a manner expected to provide significant GHG reduction benefits to backfill for shortages in cellulosic biofuel. On the other hand, we do not believe it would be appropriate for the gap in the availability of cellulosic biofuel in 2017 to be filled or partially filled with non-advanced biofuel, taking into consideration both the substantially lower greenhouse gas emissions reductions required for non-advanced biofuel[12] and the Congressional intent reflected in the statutory tables that use of these biofuels in this time period would be limited.[13] These

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[12] Non-advanced biofuel must meet the 20% reduction in lifecycle GHG emissions described in CAA section 211(o)(2)(A)(i), unless they qualify for an exemption under 40 CFR 80.1403.

[13] Since the advanced biofuel volume requirement is nested within the total renewable fuel volume requirement, the statutory implied volume for conventional renewable fuel in the statutory tables can be discerned by subtracting the applicable volume of advanced biofuel from that of total renewable fuel. Performing this calculation with respect to the tables in CAA section

considerations are consistent with EPA's past interpretation of the cellulosic waiver authority as envisioning equivalent reductions in the applicable volumes of advanced biofuels and total renewable fuels.[14] *See* 74 FR 24914; 78 FR 49810.

We believe, as we did in setting the volumes in the past, that the circumstances justifying use of our cellulosic waiver authority and thus a reduction in statutory volumes are currently present, and we are again using our cellulosic waiver authority under 211(o)(7)(D)(i) to reduce volume requirements for advanced biofuel and total renewable fuel. Congress envisioned that there would be 5.5 billion gallons of cellulosic biofuel in 2017, while our production projection, described in detail in Section III, is for 311 million gallons. Under 211(o)(7)(D)(i), EPA must lower the required cellulosic volume to the projected production volumes. See also *API* v. *EPA,* 706 F.3d 474 (D.C. Cir. 2012). Doing so also provides EPA with authority to lower advanced and total renewable fuel volumes by the same or a lesser amount.

211(o)(2)(B) indicates a Congressional expectation that in the time period 2015–2022, advanced biofuel volumes would grow from 5.5 to 21 billion gallons, while the implied volume for conventional renewable fuel would remain constant at 15 billion gallons.

[14] Our consistent view has been that the provision is best interpreted and implemented to provide for equal reductions in advanced biofuel and total renewable fuel. We believe that this approach is consistent with the statutory language and best effectuates the objectives of the statute, in that it allows for EPA to determine an appropriate volume of advanced biofuel providing meaningful GHG emissions reductions to backfill missing cellulosic volumes, while also resulting in an implied volume for conventional renewable fuel of no greater than 15 billion gallons as envisioned in the statutory time period for 2015–2022.

We have determined, as described in Section IV, that the applicable volume for advanced biofuels specified in the statute for 2017 cannot be achieved and, consistent with the principles described above, we are exercising our cellulosic waiver authority to lower the applicable volume of advanced biofuel to a level that is both reasonably attainable and appropriate, and to provide an equivalent reduction in the applicable volume of total renewable fuel. In addition, we have determined that there is adequate supply to satisfy the total renewable fuel volume derived through applying an equal volume reduction as for advanced biofuel. Therefore, no further reductions of the total renewable fuel volume requirement are necessary to address concerns of inadequate supply. The resulting volume requirements provide the benefits associated with the use of reasonably attainable and appropriate volumes of advanced biofuels to partially backfill for missing volumes of cellulosic biofuel in 2017, while also providing for an implied volume requirement for conventional biofuel equal to that envisioned by Congress for 2017.

2. General Waiver Authority

Section 211(o)(7)(A) of the CAA provides that EPA, in consultation with the Secretary of Agriculture and the Secretary of Energy, may waive the applicable volume specified in the Act in whole or in part based on petition by one or more States, by any person subject to the requirements of the Act, or by the EPA Administrator on her own motion. Such a waiver must be based on a determination by the Administrator, after public notice and opportunity for comment that (1) implementation of the requirement would severely harm the economy or the environment of a State, a region or the United States, or (2) there is an inade-

quate domestic supply. Because the general waiver provision provides EPA the discretion to waive the statutory applicable volume "in whole or in part," we interpret this section as granting EPA authority to fully or partially waive any of the four applicable volume requirements in appropriate circumstances. For the years 2014–2016, EPA determined that there was an inadequate domestic supply of total renewable fuel, and used the general waiver authority to reduce the total renewable fuel volumes further than the reductions obtained using the cellulosic waiver authority. In the notice of proposed rulemaking for this rule, EPA proposed to use the general wavier authority in a similar way, and for the same reason, in establishing the 2017 total renewable fuel volume requirement.

Based on further evaluation of the availability of renewable fuel in the market, in the interim between the NPRM and this final rule, and review of public comment, EPA has determined that it is not necessary to use the general waiver authority. That is, we have determined that use of the cellulosic waiver authority alone will be sufficient to yield a volume requirement that is consistent with available supply.[15]

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[15] Some commenters noted that in addition to the authority to reduce applicable volumes under the general waiver authority on the basis of an "inadequate domestic supply" that EPA possesses the ability to use the general waiver authority where it finds that the RFS volumes would cause "severe economic or environmental harm in a State, region, or the United States." As described in more detail in the response to comments document accompanying this rule, EPA does not believe that the record supports a finding of severe economic or environmental harm with respect to the volume requirements we are finalizing today.

3. General Comments Related to Waiver Authorities

Many commenters suggested that EPA should only use the cellulosic waiver authority to reduce volumes of total renewable fuel in 2017. While we do not believe this would have been possible under the circumstances described in the proposal, in light of EPA's re-evaluation of available supplies, as discussed in Sections IV and V, we are today following the approach suggested by these commenters in using the cellulosic waiver authority exclusively to reduce volumes of both advanced biofuel and total renewable fuel.

Some commenters said that EPA should not reduce the volume requirements for advanced biofuel and total renewable fuel at all and should instead set standards for 2017 based on the statutory targets. In most cases, these commenters based their positions on the availability of carryover RINs and an expectation that "letting the market work" would be sufficient to overcome all constraints related the production and distribution of fuels that can be used to satisfy these standards. As described in Section II.B below, we continue to believe that, in light of the expected volume of carryover RINs, it would be inappropriate for 2017 to intentionally draw down the bank of carryover RINs for the purposes of increasing the volume requirements above levels that can be satisfied with physical volume. As for "letting the market work," we believe that this view is dismissive of the market constraints discussed in the NPRM, Table II.E. 1–1 of the 2014–2016 final rule and in Sections IV.B and V.B of this final rule. The market is not unlimited in its ability to respond to the standards EPA sets. While setting the standards at the statutory targets would undoubtedly produce a significant increase in RIN prices, doing so in light of the

combined actions of all constraints shown in Table II.E.1–1 of the 2014–2016 final rule and discussed in Sections IV.B. and V.B. of this rule would nevertheless create a shortfall in supply in 2017 that would likely lead to a complete draw-down in the bank of carryover RINs, noncompliance, and/or additional petitions for a waiver of the standards. As described in Sections IV and V, we are authorized to use the cellulosic waiver authority in 2017 to reduce volumes of advanced and total renewable fuel, and believe it is appropriate to do so for the reasons noted in those sections.

B. Treatment of Carryover RINs

Consistent with our approach in the 2014–2016 final rule, we have also considered the availability and role of carryover RINs in our decision to exercise our cellulosic waiver authority in setting the advanced and total volume requirements for 2017.[16] Although the statute requires a credit program and specifies that the credits shall be valid for a 12-month time period, neither the statute nor EPA regulations specify how or whether EPA should consider the availability of carryover RINs in exercising its cellulosic waiver authority.[17]

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[16] The discussion of the role of carryover RINs as they relate to the cellulosic volume standard for 2017 can be found in Section III.D.

[17] CAA section 211(o)(5) requires that EPA establish a credit program as part of its RFS regulations, and that the credits be valid to show compliance for 12 months as of the date of generation. EPA implemented this requirement though the use of RINs, which can be used to demonstrate compliance for the year in which they are generated or the subsequent compliance year. Obligated parties can obtain more RINs than they need in a given compliance year, allowing them to "carry over" these excess RINs for use in the subsequent compliance year, although use of these carryover RINs is limited to 20% of the obligated party's RVO. For the bank of carryover RINs to be preserved from one year to

As noted in the context of the rule establishing the 2014–16 RFS standards, we believe that a bank of carryover RINs is extremely important in providing obligated parties compliance flexibility in the face of substantial uncertainties in the transportation fuel marketplace, and in providing a liquid and well-functioning RIN market upon which success of the entire program depends.[18] Carryover RINs provide flexibility in the face of a variety of circumstances that could limit the availability of RINs, including weather-related damage to renewable fuel feedstocks and other circumstances potentially affecting the production and distribution of renewable fuel.[19] On the other hand, carryover RINs can be used for compliance purposes, and in the context of the 2013 RFS rulemaking we noted that an abundance of carryover RINs available in that year, together with possible increases in renewable fuel production and import, justified maintaining the advanced and total renewable fuel volume requirements for that year at the levels specified in the statute.[20]

In the 2017 NPRM, EPA estimated that the likely volume of the carryover RIN bank for 2017 would be approximately 1.72 billion carryover RINs (including all D codes). We proposed that in light of this relatively

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the next, individual carryover RINs are used for compliance before they expire and are essentially replaced with a newer vintage RIN that is then held for use in the next year. For example, if the volume of the RIN bank is unchanged from 2016 to 2017, then all of the vintage 2016 carryover RINs must be used for compliance in 2017, or they will expire. However, the same volume of 2017 RINs can then be "banked" for use in the next year.

[18] See 80 FR 77482–77487 (December 14, 2015).

[19] See id., and 72 FR 23900 (May 1, 2007).

[20] See 79 FR 49794 (August 15, 2013).

limited volume and the important functions provided by the RIN bank, that we would not set the volume requirements for 2017 in a manner that would intentionally lead to a drawdown in the bank of carryover RINs. In their comments on the 2017 NPRM, parties generally expressed two opposing points of view. Commenters representing obligated parties supported EPA's proposed decision to not assume a drawdown in the bank of carryover RINs in determining the appropriate level of volume requirements. These commenters reiterated the importance of maintaining the carryover RIN bank in order to provide obligated parties with necessary compliance flexibilities, better market trading liquidity, and a cushion against future program uncertainty. Commenters representing renewable fuel producers, however, contended that carryover RINs represent actual supply and should be accounted for when establishing the annual volume standards and, in particular, in any determination under the general waiver authority that there is an "inadequate domestic supply." They expressed concern that obligated parties could use carryover RINs as an alternative to RINs generated for renewable fuel produced in 2017, leading to less demand for their product and inadequate return on investment.[21]

1. Updated Projection of Carryover RIN Volume

In the NPRM, EPA estimated that the carryover RIN bank available in 2017 would be approximately 1.72 billion carryover RINs. Since that time, obligated parties have submitted their compliance demonstra-

[21] A full description of comments received, and our detailed responses to them, is available in the Response to Comments document in the docket.

tions for the 2014 compliance year and, based on that information, we now estimate that there will at most be 1.54 billion carryover RINs available for possible use in complying with the standards for 2017, a decrease of nearly 200 million RINs from the previous estimate.[22] This is approximately 8 percent of the final 2017 total renewable fuel volume standard and less than half of the 20 percent limit permitted by the regulations to be carried over for use in complying with the 2017 standards. However, there remains considerable uncertainty surrounding this number since compliance demonstrations still need to be made for the 2015 and 2016 RFS standards, and it is unclear at this time whether some portion of the 1.54 billion carryover RINs we estimate will be available for the 2017 compliance demonstrations will be used for compliance prior to 2017. In addition, we note that there have been enforcement actions in past years that have resulted in the retirement of RINs that were fraudulently generated and were therefore invalid, and parties that relied on those invalid RINs for compliance were required to acquire valid substitutes to true up their past compliance demonstrations. Future enforcement actions could have similar results, and require that obligated parties settle past enforcement-related obligations in addition to the annual standards, thereby potentially creating demand for RINs greater than can be accommodated through actual renewable fuel blending in 2017. Collectively, the result of satisfying RFS obligations in 2015 and 2016 and settling enforcement-related accounts could be an effective reduction in the size of the collective bank of carryover RINs to a level below

[22] The calculations performed to estimate the number of carryover RINs available in 2017 can be found in the memorandum, "2017 Carryover RIN Bank Calculations," available in the docket.

1.54 billion RINs. Thus, we believe there is considerable uncertainty that a RIN bank as large as 1.54 billion RINs will be available in 2017.

2. EPA's Decision

EPA has decided to maintain the proposed approach, and not set the volume requirements in the final rule with the intention or expectation of drawing down the current bank of carryover RINs. In finalizing this approach, we carefully considered the many comments received, including on the role of carryover RINs under our waiver authorities and the policy implications of our decision. While we have not assumed an intentional drawdown in the overall bank of carryover RINs owned by obligated parties collectively in establishing the volume requirements for 2017, we understand that some obligated parties may choose to sell or use all or part of their individual banks of carryover RINs. To the extent that they do so, other obligated parties would be in a position to bank carryover RINs by using available renewable fuel or purchasing RINs representing such fuel, with the expected net result being no effective change in the size of the overall bank of carryover RINs that is owned collectively by obligated parties.

In response to those parties who argued that carryover RINs must be considered part of the "supply" when EPA uses the general waiver authority on the basis of a finding of "inadequate domestic supply," we note that we are not using the general waiver authority in this final action, so these arguments are irrelevant. We believe that a balanced consideration of the possible role of carryover RINs in achieving the statutory volume objectives for advanced and total renewable fuels, versus maintaining an adequate bank of carryover RINs for important programmatic functions, is appro-

priate when EPA exercises its discretion under the cellulosic waiver authority, and that the statute does not specify the extent to which EPA should require a drawdown in the bank of carryover RINs when it exercises this authority.

An adequate RIN bank serves to make the RIN market liquid and to avoid the possible need for adjustments to the standards. Just as the economy as a whole functions best when individuals and businesses prudently plan for unforeseen events by maintaining inventories and reserve money accounts, we believe that the RFS program functions best when sufficient carryover RINs are held in reserve for potential use by the RIN holders themselves, or for possible sale to others that may not have established their own carryover RIN reserves. Were there to be no RINs in reserve, then even minor disruptions causing shortfalls in renewable fuel production or distribution, or higher than expected transportation fuel demand (requiring greater volumes of renewable fuel to comply with the percentage standards that apply to all volumes of transportation fuel, including the unexpected volumes) could lead to the need for a new waiver of the standards, undermining the market certainty so critical to the long term success of the RFS program. Furthermore, many obligated parties lack the ability to separate one or more types of RINs through blending. With a functioning liquid RIN market this is not a problem because we expect that these obligated parties will be able to comply by securing these RINs on the open market. However, a significant drawdown of the carryover RIN bank leading to a scarcity of RINs may stop the market from functioning in an efficient manner, even where the market overall could satisfy the standards. For all of these reasons, the collective carryover RIN bank provides a needed programmatic buffer that both facili-

tates individual compliance and provides for smooth overall functioning of the program.[23] With volume requirements increasing annually, and the size of the carryover RIN bank shrinking through use of carryover RINs in both 2013 and 2014, we believe it is prudent not to intentionally draw down the RIN bank for 2017 that we have determined will not likely be larger than 1.54 billion carryover RINs, and which could in fact be smaller.

For the reasons noted above, and consistent with the approach we took in the 2014–2016 final rule, we have determined that under current circumstances, an intentional drawdown of the carryover RIN bank should not be assumed in establishing the 2017 volume requirements. The current bank of carryover RINs will provide an important and necessary programmatic buffer that will both facilitate individual compliance and provide for smooth overall functioning of the program. Therefore, we are not setting renewable fuel volume requirements at levels that would envision the drawdown in the bank of carryover RINs. However, we note that we may or may not take a similar approach in future years; we will assess the situation on a case-by-case basis going forward, and take into account the size of the carryover RIN bank in the future and any lessons learned from implementing past rules.

[Content Omitted]

V. Total Renewable Fuel Volume for 2017

The national volume targets of total renewable fuel to be used under the RFS program each year through

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[23] Here we use the term "buffer" as shorthand reference to all of the benefits that are provided by a sufficient bank of carryover RINs.

2022 are specified in CAA section 211(o)(2)(B)(i)(I). For 2017 the statute stipulates that the volume of total renewable fuel should be 24 billion gallons. Since we have determined that the statutory volume target for cellulosic biofuel must be reduced to reflect the projected production volume of that fuel type in 2017, we are authorized under CAA section 211(o)(7)(D)(i) to reduce the advanced biofuel and total renewable fuel targets by the same or a lesser amount. We also have the authority to reduce any volume target under the general waiver authority under specific conditions as described in Section II.A.2. Although in the NPRM we had proposed to use a combination of the cellulosic waiver authority and the general waiver authority to reduce the statutory volume target for total renewable fuel for 2017, we have determined, based on comments received in response to the NPRM and a review of updated information, that 2017 supply is adequate to meet a total renewable fuel volume requirement of 19.28 billion gallons resulting from the use of the cellulosic waiver authority alone. The use of the general waiver authority for 2017 to further reduce the total renewable fuel standard is therefore not necessary. As a result, the implied volume for conventional (non-advanced) renewable fuel will be 15.0 billion gallons.

Today's standards are significantly higher than have been achieved in the past and will drive significant growth in renewable fuel use beyond what would occur in the absence of the requirements. The final volume requirements for both advanced biofuel and total renewable fuel recognize the ability of the market to respond to the standards we set, thereby accomplishing the goals of the statute to increase renewable fuel use.

We investigated whether the market is on track to meet the 2016 total renewable fuel volume requirement of 18.11 billion gallons, which EPA projected to be the maximum achievable volume for that year in the context of our use of the general waiver authority. As described in a memorandum to the docket, supply through the end of September coupled with a projection based on consideration of seasonal variations in supply for previous years indicate that compliance with the 2016 standards is indeed within reach.[100] We believe these results support the assessment conducted for purposes of establishing the 2016 total renewable fuel standard. For this final rule, we have taken a similar approach to assessing the adequacy of supply of total renewable fuel that differs in some particulars as described below.

A. Volumetric Limitation on Use of the Cellulosic Waiver Authority

In Section IV.B we explained our use of the cellulosic waiver authority to reduce the statutory volume target for advanced biofuel to a level that we have determined is reasonably attainable and appropriate given a consideration of factors related to the likely constraints on imports, distribution and use, and global GHG impacts of incremental growth in advanced biodiesel and renewable diesel. This did not require a reduction as large as the reduction in the statutory volume target for cellulosic biofuel, and so this reduction was within the authority provided by CAA section 211(o)(7)(D)(i).

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[100] "Comparison of 2016 availability of RINs and 2016 standards," memorandum from David Korotney to docket EPA–HQ–OAR–2016–0004.

As discussed in Section II.A.1, we believe that the cellulosic waiver provision is best interpreted to require equal reductions in advanced biofuel and total renewable fuel. We have consistently articulated this interpretation.[101] Having determined that we should establish the advanced biofuel volume at a level requiring a reduction of 4,719 million gallons from the statutory target, applying an equal reduction to the statutory target for total renewable fuel yields the results shown below.

TABLE V.A–1—APPLYING EQUAL VOLUME REDUCTIONS TO TOTAL RENEWABLE FUEL AS FOR ADVANCED BIOFUEL UNDER CELLULOSIC WAIVER AUTHORITY

[Million gallons]

	Advanced biofuel	Total renewable fuel
Statutory target	9,000	24,000
Reduction under the cellulosic waiver authority	4,719	4,719
Resulting volume	4,281	19,281

If we were to determine that there is an inadequate domestic supply to satisfy the total renewable fuel volume resulting from use of the cellulosic waiver authority alone, we could use the general waiver authority, described in Section II.A.2, to provide further reductions. Indeed, we proposed such an approach. However, we have re-evaluated the situation in light of new data and consideration of comments, and as described below we have determined that there will be adequate supply

[101] For instance, see discussion in the final rule setting the 2013 standards: 78 FR 49809–49810, August 15, 2013.

to meet a total renewable fuel volume requirement of 19.28 billion gallons in 2017.[102] As a result of this assessment, we have determined that further reductions in the total renewable fuel applicable volume using the general wavier authority are not necessary.

B. Assessing Adequacy of Supply

As noted above, the applicable volume of total renewable fuel was derived by applying the same volume reduction to the statutory volume target for total renewable fuel as was determined to be appropriate for advanced biofuel, using the cellulosic waiver authority. This section describes our assessment that there is adequate supply to meet an applicable volume requirement of 19.28 billion gallons. The objective of our assessment is different than our analysis in the NPRM, where we sought to identify the maximum reasonably achievable volume of total renewable fuel based on the sum of estimates of each type of renewable fuel, such as total ethanol, biodiesel and renewable diesel, biogas, and other non-ethanol renewable fuels. In this final rule, in contrast, we instead are evaluating those sources to determine if in the aggregate it appears that there is adequate supply to meet the total renewable fuel volume shown in Table V.A–1. Based on our conclusion that there is sufficient supply as discussed below, it is unnecessary to address any inadequate domestic supply through use of the general waiver authority.

Despite the different objective, we face much the same challenges that we noted in the NPRM: It is a

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[102] Stakeholder comments most directly impacting our assessment of the adequacy of supply of total renewable fuel were directed at distribution issues associated with biodiesel and renewable diesel. See Section V.B.2 for further discussion.

very challenging task to estimate the adequacy of supply in light of the myriad complexities of the fuels market and how individual aspects of the industry might change in the future, and also because we cannot precisely predict how the market will respond to the volume-driving provisions of the RFS program. This is the type of assessment that is not given to precise measurement and necessarily involves considerable exercise of judgment.

Our investigation into whether there is adequate supply to meet the total renewable fuel volume shown in Table V.A–1 was driven primarily by a consideration of the total amount of ethanol that can be reasonably attained in light of various constraints, and the total volume of biodiesel and renewable diesel that can be reasonably attained. We also considered smaller contributions from non-ethanol cellulosic and other non-ethanol renewable fuels (*i.e.* naphtha, heating oil, butanol, and jet fuel). With regard to the more dominant contributors, the information that is available has allowed us to make a relatively more precise estimate of total supply of ethanol than of biodiesel/renewable diesel. This is due to the fact that the primary constraints in the supply of ethanol in 2017 are readily identifiable, although still challenging to quantify, while there are many different factors that could potentially constrain the supply of biodiesel and renewable diesel in 2017. As a result, we did not attempt to derive a specific estimate of reasonably attainable supply of total biodiesel and renewable diesel. Instead, after estimating what we consider to be reasonably attainable supply of ethanol in 2017, and taking into account the estimates of non-ethanol cellulosic biofuel supply discussed in Section III.D above and estimates of other non-ethanol renewable fuel supply discussed in Section IV.B.3, we considered whether the supply of total

biodiesel and renewable diesel would be adequate to satisfy a requirement of 19.28 billion gallons.[103] The following sections provide our assessment of ethanol and biodiesel/renewable diesel volumes.

1. Ethanol

Ethanol is the most widely produced and consumed biofuel, both domestically and globally. Since the beginning of the RFS program, the total volume of renewable fuel produced and consumed in the United States has grown substantially each year, primarily due to the increased production and use of corn ethanol. However, the rate of growth in the supply of ethanol to the U.S. market has decreased in recent years as the gasoline market has become saturated with E10, and efforts to expand the use of higher ethanol blends such as E15 and E85 have not been sufficient to maintain past growth rates. Although we believe ethanol use is growing and can continue to grow, the low number of retail stations selling these higher-level ethanol blends, along with poor price advantages compared to E10, and a limited number of FFVs, among others, represent challenges to the rate of growth of ethanol as a transportation fuel in the United States.

In the 2014–2016 final rule we discussed in detail the factors that constrain growth in ethanol supply and the opportunities that exist for pushing the market to

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[103] As noted earlier, "reasonably attainable" volumes may be less than the "maximum achievable" volumes we would seek to identify when using the general waiver authority based on a finding of inadequate domestic supply. It follows that if there are sufficient reasonably attainable volumes of renewable fuel to satisfy a total renewable fuel requirement of 19.28 billion gallons, that there is no basis for a finding of inadequate domestic supply.

overcome those constraints.[104] That discussion generally remains relevant for 2017, though we believe that the supply of ethanol can be somewhat higher in 2017 than in 2016.

Ethanol supply is not currently limited by production and import capacity, which is in excess of 15 billion gallons.[105] Instead, the amount of ethanol supplied is constrained by the following:

- Overall gasoline demand and the volume of ethanol that can be blended into gasoline as E10 (typically referred to as the E10 blendwall).
- The number of retail stations that offer higher ethanol blends such as E15 and E85.
- The number of vehicles that can both legally and practically consume E15 and/or E85.
- Relative pricing of E15 and E85 versus E10 and the ability of RINs to affect this relative pricing.
- The supply of gasoline without ethanol (E0).

The applicable standards that we set under the RFS program provide incentives for the market to overcome many of these ethanol-related constraints.

While in the short term the RFS program is unlikely to have a direct effect on overall gasoline demand or the number of vehicles designed to use higher ethanol

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[104] 80 FR 77456–77465.

[105] "RFA 2016 Annual Industry Outlook," docket EPA–HQ–OAR–2016–0004.

blends, it can provide incentives for changes in some other market factors, such as the number of retail stations that offer higher ethanol blends and the relative pricing of those higher ethanol blends in comparison to E10. The RFS program complements other efforts to increase the use of renewable fuels, such as the following:

- USDA's Biofuel Infrastructure Partnership (BIP) program which has provided $100 million in grants for the expansion of renewable fuel infrastructure in 2016 (supported by additional State matching funds)
- USDA's Biorefinery Assistance Program which has provided loan guarantees for the development and construction of commercial-scale biorefineries with a number of the new projects focused on producing fuels other than ethanol.
- The ethanol industry's Prime the Pump program, which has committed more than $45 million to date for retail refueling infrastructure[106]

In response to the NPRM, many stakeholders repeated their views from the 2014–2016 rulemaking regarding the existence and nature of the E10 blendwall. Ethanol proponents generally regard the blendwall as a fictional idea created by refiners, and said or implied that increases in ethanol supply beyond the blendwall are only limited by refiners' unwillingness to invest in the necessary infrastructure. Some also said that EPA's approach to setting standards, in

[106] "Email dialogue with Robert White on Prime the Pump," docket EPA–HQ–OAR–2016–0004.

which constraints on the supply of ethanol are used as justification for reducing the volume requirement below the statutory targets, was a self-fulfilling prophecy that guaranteed that the blendwall would never be exceeded. Refiners and marketers typically viewed the constraints associated with the blendwall as representing a firm barrier that could not or should not be crossed, with costs for necessary infrastructure changes being prohibitively high and the associated opportunities for greater profits at retail being inconsequentially low. In their views, higher level ethanol blends such as E15 and E85 would be negligible in 2017 and standards that required higher ethanol blends to increase dramatically would compel refiners to reduce domestic supply of gasoline and diesel or risk non-compliance.

As stated in the 2014–2016 final rule and in the NPRM, our view of the E10 blendwall falls between these two viewpoints. We continue to believe that there are real constraints on the ability of the market to exceed an average nationwide ethanol content of 10%. However, these constraints do not have the same significance at all ethanol concentrations above 10%. Instead, for the state of infrastructure that can be available in 2017, the constraints represent a continuum of mild resistance to growth at the first increments above 10% ethanol and evolve to significant obstacles at higher levels of ethanol. In short, the E10 blendwall is not the barrier that some stakeholders believe it to be, but neither are increases in poolwide ethanol concentrations above 10% unlimited in the 2017 timeframe.

We continue to believe that the constraints associated with the E10 blendwall do not represent a firm barrier that cannot or should not be crossed. Rather, the E10 blendwall marks the transition from rela-

tively straightforward and easily achievable increases in ethanol consumption as E10 to those increases in ethanol consumption as E15 and E85 that are more challenging to achieve. Comments received in response to the NPRM provided no compelling evidence that the nationwide average ethanol concentration in gasoline cannot exceed 10.0%.

However, we also recognize that the market is not unlimited in its ability to respond to the standards we set. This is true both for expanded use of ethanol and for non-ethanol renewable fuels. The fuels marketplace in the United States is large, diverse, and complex, made up of many different players with different, and often competing, interests. Substantial growth in the renewable fuel volumes beyond current levels will require action by many different parts of the fuel market, and a constraint in any one part of the market can act to limit the growth in renewable fuel supply. Whether notable constraints are in the technology development and commercialization stages, as has been the case with cellulosic biofuels, the development of distribution infrastructure as is the case with ethanol, or in the distribution and use of biodiesel, the end result is that these constraints limit the growth rate in the available supply of renewable fuel as transportation fuel, heating oil, or jet fuel. These constraints were discussed in detail in the 2014–2016 final rule, and we believe that the same constraints will operate to limit supply for 2017 as well.[107] Other factors outside the purview of the RFS program also impact the supply of renewable fuel, including the price of crude oil and global supply and demand of both renewable fuels and their feedstocks. These factors add uncertainty to the

[107] See 80 FR 77450.

task of estimating the adequacy of supply of renewable fuel in the future.

While the constraints are real and must be taken into account in our evaluation of whether there is adequate supply to meet 19.28 billion gallons of total renewable fuel, none of those constraints represent insurmountable barriers to growth. Rather, they are challenges that are in the process of being addressed and will be overcome in a responsive marketplace given enough time and with appropriate investment. The speed with which the market can overcome these constraints is a function of whether and how effectively parties involved in the many diverse aspects of renewable fuel suppl respond to the challenges associated with transitioning from fossil-based fuels to renewable fuels, the incentives provided by the RFS program, and other programs designed to incentivize renewable fuel use.

i. E0

We based the proposed total renewable fuel volume requirement in the NPRM on the same expectation from the 2014–2016 final rule regarding supply of E0: The RFS program would result in all but a tiny portion—estimated at 200 million gallons—of gasoline to contain at least 10% ethanol. We based this determination on the following two considerations:

1. The RFS program will continue incentivizing the market to transition from E0 to E10 and other higher level ethanol blends through the RIN mechanism.
2. Recreational marine engines represent a market segment that we believe would be particularly difficult to completely transition from E0 since they are used in a water

> environment where there is a greater potential for water contamination of the fuel. Some consumers are concerned that there could be a potential for consequent engine damage following phase separation of the water and fuel.[108]

Based on the analysis conducted for the 2014–2016 final rule, it is most likely that any recreational marine engines refueled at retail service stations (*i.e.,* not at marinas) would use only E10 since E0 is not typically offered at retail. Moreover, only a small minority of recreational marine engines refuel at marinas where E0 is more likely to be available, catering to that particular market. In a memorandum to the docket, we evaluated the information that had been supplied to us by stakeholders, highlighting the uncertainty in that information and concluding that about 200 million gallons of E0 was a reasonable estimate of the volume likely to be consumed by recreational marine engines.[109] In the NPRM, we expressed our belief that this analysis also reflected reasonable expectations for 2017.

In response to the proposal for the 2017 standards, some stakeholders said that we had significantly underestimated the volume of E0 used by recreational marine

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[108] We note that a recent report from the National Renewable Energy Laboratory calls into question the significance of water contamination for recreational marine engines. See "Gas becomes stale before water uptake becomes a concern," Ethanol Producer Magazine, September 21, 2016. See also original report "Water Uptake and Weathering of Ethanol-Gasoline Blends in Humid Environments," by Christensen & McCormick, National Renewable Energy Laboratory, September, 2016.

[109] "Estimating E0 use in recreational marine engines," memorandum from David Korotney to docket EPA–HQ–OAR–2015–0111.

engines. However, no new information was provided that was not already considered in the 2014–2016 final rule and discussed in the aforementioned memorandum and, as before, no stakeholders provided any data on actual consumption of E0 by recreational marine engines. Moreover, the anecdotal information suggesting that most if not all recreational marine engines are fueled on E0 does not represent an appropriate basis for increasing our estimate since it was not based on any form of data and moreover appears highly unlikely given our expectation that only a small minority of recreational marine engines refuel at marinas where E0 is likely to be more prevalent.

Other stakeholders said that we had ignored significant demand for E0 in our determination of the total volume of ethanol that can be supplied. They pointed beyond recreational marine engines to other small engines where there is demand for E0, and to Web sites like *Pure-gas.org*, which claim to list more than 11,000 stations which offer E0. Several stakeholders pointed to a report from EIA suggesting that 5.3 billion gallons of E0 was consumed in 2015.[110] Several refiners reiterated their comments responding to the 2014–2016 proposal which used EIA data to conclude that there is ongoing demand for E0 at a level of at least 3% of the total gasoline pool. This estimate of E0 demand was the primary basis for their request that the 2017 standards be set in such a way that the poolwide gasoline ethanol concentration is no higher than 9.7%.

Other than references to data and analyses collected by EIA, no stakeholder provided any data on actual E0

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[110] "Almost all U.S. gasoline is blended with 10% ethanol," Energy Information Administration, *Today In Energy,* May 4, 2016.

consumption. With regard to data from EIA, in the 2014–2016 final rule we addressed refiners' claim that 3% of the gasoline pool has been E0 for several years, concluding that those estimates were generated from incomplete EIA gasoline supply data which overestimated the potential demand for E0 at retail.[111] Comments from refiners in response to the 2017 proposal did not provide any new or different information that would change our conclusions with regard to that 3% estimate.

With regard to EIA's more recent estimate that 5.3 billion gallons of E0 was consumed in 2015, we do not believe that this value represents consumption of E0 at the retail. EIA's estimate was based on survey data from most U.S. terminals, which include information about domestic distribution from the terminal level and exports of ethanol-free gasoline, with the difference representing domestic disposition. EIA combines this information with estimates of available ethanol, assuming that the ethanol is used in a 10% blend with ethanol-free gasoline. As described in a memorandum to the docket, our analysis of EIA's estimate of 5.3 billion gallons of E0 concludes that it would require E85 volumes significantly higher than the volumes likely to have been supplied in 2015.[112] In our view, the 5.3 billion gallons of E0 estimated by EIA must include volumes that are blended with ethanol downstream of terminal prior to dispensing from retail and centralized fleet refueling stations where additional ethanol blending can and does occur in excess of the blending used in EIA's estimate. The calculations are very

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[111] See discussion at 80 FR 77462.

[112] "Ethanol Consumption in 2015 and Estimates of E0 Use," memorandum from David Korotney to Docket EPA–HQ–OAR–2016–0004.

sensitive to the exact volume of total ethanol available for blending, with EIA and EPA estimated volumes of total ethanol used differing by about 1 percent. We believe that EMTS data provides more accurate information on actual use of ethanol in motor fuel than EIA's survey data on ethanol production, blending, imports, and exports because it accounts for every gallon of ethanol produced but not exported, and is verified by the purchaser in the transaction within EMTS. Based on our analysis, we estimate that E0 consumption at the retail level in 2015 would have been closer to about 700 million gallons.

Some stakeholders pointed out that it would be difficult for the market to transition about 5 billion gallons of E0 to E10 within one year. However, since we believe that actual consumption of E0 in 2015 was much closer to 700 million gallons than 5.3 billion gallons, continuing to transition away from E0 since then to 200 million gallons of E0 by the end of 2017 is achievable. As a result, we continue to believe that 200 million gallons of E0 is a reasonable value to assume for purposes of assessing the adequacy of supply of total renewable fuel, based on our prior assessment that this volume dedicated to recreational marine engine use may not be significantly influenced by the standards we set in this time period, and our expectation that the RFS program will continue to incentivize all but this small portion of the gasoline pool to be blended with ethanol.

Stakeholders representing boat owners expressed concern that by including only 200 million gallons of E0 in the proposed derivation of maximum achievable total renewable fuel volumes, EPA anticipated effectively limiting the availability of E0 to 200 million gallons. This is not the case. The standards that EPA sets are not specific to ethanol nor to specific ethanol

blends. Once the standards are set, the market has the flexibility to choose the mix of fuel types used to meet those standards. If, for instance, the demand for E0 in 2017 is higher than 200 million gallons, the market can compensate by providing higher volumes of E15 and/or E85, or additional non-ethanol renewable fuels.

ii. E15

In the NPRM, we proposed that a total ethanol volume of 14.4 billion gallons could be reached in 2017 based on the expectation that somewhat larger increases in ethanol supply were possible in 2017 than we had estimated for 2016. We did not provide specific estimates of E15 or E85 use in 2017, but instead said that we generally expected the RFS program to influence sales of E0, E15, and E85 in such a way as to produce this increase in ethanol volume. For this final rule, we have undertaken a more detailed estimate of the volumes of E15 and E85 that are possible in 2017, so as to more confidently assess whether there is adequate supply to reach a total renewable fuel volume requirement of 19.28 billion gallons.

Most comments in response to the NPRM repeated viewpoints they had expressed in response to the 2014–2016 proposal. Refiners and their associations, as well as parties representing fuel marketers and retail, expressed doubt that the number of stations offering E15 could increase significantly in 2017 and pointed to vehicle warranties that they believed would hinder many owners of 2001+ model year vehicles from refueling on E15. They also repeated their concerns about engine damage and liability for misfueling. Ethanol proponents generally pointed to the large number of in-use vehicles that are legally permitted to use E15 and information suggesting that many existing retail stations are already compatible with E15, or can be

inexpensively upgraded. They also pointed to incentives for expanded infrastructure provided by programs such as USDA's Biofuels Infrastructure Partnership (BIP) program and the ethanol industry's Prime the Pump program. A more detailed discussion of our views of these comments can be found in the 2014–2016 final rule and in the Response to Comments document for this final rule.[113]

Consistent with our assessment for the 2014–16 final rule, we believe that neither the number of vehicles that are legally permitted to use E15, nor the number of owners of such vehicles who would choose to use it, are the predominant factors in determining the volume of E15 that is reasonably attainable in 2017. Instead, we believe that it is the number of retail stations offering E15 in 2017 that is more likely to determine how much E15 is actually consumed. The number of retail stations registered to offer E15 has grown to about 400 in the fall of 2016 based on information collected by the RFG Survey Association, more than doubling from the previous year. However, this is still a very small fraction of the approximately 150,000 retail stations currently operating. Based on comments received from retail station owners and their associations, this low number of retail stations offering E15 is most likely due to liability concerns and low expectations for a return on an investment in new or upgraded infrastructure.

We do not believe, based on past experience, that the core concerns retailers have with liability over equipment compatibility and misfueling would change if the RFS volume requirements were increased significantly. Similarly, while higher RFS volume require-

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[113] See discussion at 80 FR 77462–77464.

ments could make it incrementally more attractive for retailers to upgrade infrastructure to offer E15, the concerns they expressed in their comments about high capital costs and opportunities for return on their investment would remain. As a result, setting higher volume requirements would be unlikely to result in dramatic increases in the number of additional retail stations offering E15 in 2017 beyond those that may be upgraded through existing grant programs. As a result, we do not believe that E15 infrastructure expansion can occur on the much larger scale and faster timeframe that ethanol proponents believe it can. However, we do believe that retail infrastructure can and will change to offer more E15 in 2017. We have estimated the expansion that is possible in 2017 based on information on both the BIP and Prime the Pump programs, as well as an expectation that independent efforts to expand infrastructure will continue. As described in a memorandum to the docket, we believe that the number of stations will increase during the course of the year, and that an annual average of about 1,640 retail stations will be able to offer E15 in 2017.[114]

Since actual experience with E15 sales is so limited, and commenters provided little information on actual E15 sales volumes, we have made an estimate of possible E15 use in 2017 using the same methodology that was presented in the 2014–2016 final rule, supplemented by additional information about E15 that is expected to be supplied by terminals.[115] That estimate

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[114] "Projections of retail stations offering E15 and E85 in 2017," memorandum from David Korotney to docket EPA–HQ–OAR–2016–0004.

[115] "Estimates of E15 and E85 volumes in 2017," memorandum from David Korotney to docket EPA–HQ–OAR–2016–0004.

was based on the following equation, which was also used in the 2014–2016 final rule:

E15 volume = (Total gasoline throughput per station) ×(Number of stations offering E15) ×(Fraction of total gasoline sales which are E15)

We have updated the values used in this calculation based on comments provided by stakeholders and additional information that has become available since release of the NPRM. First, we have updated the number of retail stations that may offer E15 in 2017, as discussed above. Second, some stakeholders said that retail stations being targeted under the BIP program had greater total annual gasoline sales than average, such that it would be inappropriate to assume that the total gasoline throughput per retail service station in the above equation is equal to the nationwide average, currently about 0.95 million gallons per station per year. Available information on the BIP program does not include gasoline throughput, but larger retail stations would be more likely to produce the matching funds necessary as a condition of receiving BIP grant funds. One stakeholder that is actively and directly working with many of the retailers using funds from the BIP and Prime the Pump programs indicated that the average total gasoline throughput for affected retail stations is 2.8 billion gallons per year. Therefore, we have used this value in our determination of E15 supply for 2017. Further discussion can be found in a memorandum to the docket.[116]

Finally, in the 2014–2016 final rule we used a value of 50% for the fraction of total gasoline sales which are E15 at stations offering both E10 and E15 based on the expectation that E10 and E15 could be priced

[116] Ibid.

equally on a volumetric energy basis. While we continue to believe that 50% is possible, a number of refiners pointed out reasons that 50% may be too high in the near term, including the fact that there are likely to be fewer dispensers at a given retail station offering E15 than those offering only E10, and customer familiarity with E10. One party indicated that in Iowa in 2015, per-station E15 sales were 15% of per-station E10 sales, though the data on which this conclusion was based did not rely on retail stations selling both E10 and E15; the per-station estimate for E10 was based on all stations offering E10, regardless of whether they also offered E15. Not only are the Iowa data not necessarily representative of stations offering both E10 and E15, we have no information to indicate whether the experience in Iowa is representative of conditions that could exist under the increasing RFS standards in 2017. Nevertheless, we agree that the fraction of total gasoline sales which is E15 at stations offering both E15 and E10 is likely to be considerably less than 50% for the reasons described earlier (*e.g.,* number of dispensers offering E15 at a given station, consumer unfamiliarity with E15), at least in 2017. Since we only have one source of data upon which to base our estimate, we are using that 15% value in our assessment.

Although E15 has historically been produced at retail stations in blender pumps, since release of the NPRM we have become aware of new activities to produce E15 at terminals.[117] This E15 could be used in retail equipment that has been certified to be compatible with E15, and so would expand the use of E15 beyond that available through blender pumps, includ-

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[117] "HWRT & RFA Announce First-Ever Offering of Pre-blended E15," docket EPA–HQ–OAR–2016–0004.

ing those targeted by the BIP and Prime the Pump programs. Based on currently available information, four out of the approximately 1,400 terminals in the U.S. would produce E15 in 2017, and we expect that E15 production at those four terminals would be small in comparison to E10 production. As described in a memorandum to the docket, we estimate the E15 produced through terminals would be 41 million gallons in 2017.[118]

Based on the above discussion, we have estimated that total E15 supply in 2017 could reach 728 million gallons, resulting in about 38 million gallons of ethanol more than would be supplied if that portion of the gasoline pool were E10. We have included this in our discussion of total ethanol volumes in Section V.B.1.iv below.

iii. E85

As described previously, the NPRM did not provide specific estimates of E15 or E85 use in 2017, but instead indicated that we generally expected the RFS program to influence sales of E0, E15, and E85 in such a way as to produce a total ethanol supply of 14.4 billion gallons. Nevertheless, stakeholders provided comments on a variety of topics related to the estimation of achievable volumes of E85.[119] Many of these comments focused on an analysis of the relationship between E85 sales volumes and E85 price discount derived from pub-

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[118] "Estimates of E15 and E85 volumes in 2017," memorandum from David Korotney to docket EPA–HQ–OAR–2016–0004.

[119] We note that, in the 2014–2016 final rule, the estimation of E85 volumes was made in the context of determining the volume that constituted inadequate domestic supply under our general waiver authority. For this final rule, we are using the cellulosic waiver authority alone, and are estimating reasonably attainable volumes of E85.

lically available data from six states, which was provided with the 2014–2016 final rule.[120]

As for many other aspects of this rule, stakeholders were strongly divided on the volumes of E85 that are achievable in 2017. Refiners typically said that E85 volumes are likely to reach little more than around 100 million gallons in 2017 based on their own estimates of E85 in previous years using data collected by EIA from refiners, blenders, and ethanol production facilities. For instance, refiners suggested that E85 use in 2015 reached only 87 million gallons. However, as discussed in the 2014–2016 final rule, the EIA sources on which this estimate was based do not capture all E85 that is actually used; not all production at terminals, ethanol production facilities, or blenders with less than 50,000 barrels of product storage capacity are included, nor is E85 captured which is produced using reformulated gasoline or natural gasoline as the petroleum based component. Also, reported E85 production at ethanol production facilities is likely to represent net rather than total finished fuel production given the occasional negative values reported in the past.[121] These stakeholders provided no new information on historical E85 supply beyond what these EIA sources

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[120] "Correlating E85 consumption volumes with E85 price," memorandum from David Korotney to docket EPA–HQ–OAR–2015–0111.

[121] Reported values for ethanol production facilities represent net finished fuel produced. Insofar as finished fuel brought into the facility (*i.e.,* gasoline) exceeds finished fuel produced by the facility (*i.e.,* E85), a net negative value will result. This would occur if gasoline brought into the facility is used as a denaturant only, or as both a denaturant and in the production of E85. As a result, the values reported by EIA do not capture actual E85 produced and made available by these facilities, which would be the relevant value to use in our assessment.

capture. As described in a memorandum to the docket, our own estimate of actual E85 use in 2015 based on E85 supply data from six states is approximately 186 million gallons.[122] Moreover, we also do not believe it would be appropriate to merely extrapolate 2017 E85 supply from trends in the past several years as some stakeholders suggested. Doing so would ignore the ability of the market to respond to the standards that we set.

In contrast, ethanol proponents said that E85 volumes could reach at least 500 million gallons in 2017, and some provided estimates considerably higher. Several pointed to E85 supply projections from EIA's Annual Energy Outlook 2016 (AEO2016), which projects 735 million gallons for 2017. However, we do not believe that the AEO is an appropriate basis for projecting E85 supply in 2017 for the purposes of setting the applicable volume requirements under the RFS program. For instance, the same modeling that projected 735 million gallons for 2017 also projected 326 and 508 million gallons, respectively, for 2014 and 2015. These volumes are far higher than what we believe the actual supply was in these years.[123] And AEO2016 projects that total ethanol use in 2017 would be 13.8 billion gallons, far lower than the 14.4 billion gallons that we proposed as the maximum achievable, and also considerably lower than EIA's own projections for 2017 in their Short-Term Energy Outlook (STEO). As the STEO projections are based on more current information and are focused on more near-term outcomes,

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[122] "Final estimate of E85 consumption in 2015," memorandum from David Korotney to docket EPA–HQ–OAR–2016–0004.

[123] For instance, as described in the 2014–2016 final rule (80 FR 77460), we estimate that E85 use in 2014 was about 150 mill gal.

and the STEO also forms the basis for the gasoline and diesel demand projections that EIA has indicated should be used for determining the applicable percentage standards, we do not believe that AEO is an appropriate basis for estimating the E85 supply in 2017 that is reasonably attainable, nor, as another commenter suggested, total gasoline energy demand for 2016. We have used the STEO for the projection of 2017 total gasoline demand, combined with our own projections of total ethanol supply based on our estimates of reasonably attainable volumes of E15 and E85, along with a small amount of E0.

For those stakeholders who provided detailed comments on how E85 supply might best be projected for 2017, those comments typically focused on three areas:

- The number of flex-fueled vehicles (FFVs) in the 2017 fleet that can use E85
- The retail infrastructure that can be made available in 2017 to supply E85 to FFVs
- The degree to which E85 sales can be influenced by the E85 price discount relative to E10

We continue to believe that the number of FFVs in the fleet is not the controlling constraint on the use of E85. According to AEO2016, the number of FFVs in the fleet in 2017 is expected to be about 21 million.[124] These vehicles could use up to 13 billion gallons of E85 if all of them had access to retail stations offering it and all FFV owners chose to refuel on E85 instead of E10. We acknowledge that a larger percentage of FFVs in the fleet could increase the volume of E85 consumed, but in the short term we believe that it is the relatively

[124] Table 40, "Light-Duty Vehicle Stock by Technology Type."

very small number of retail stations offering E85 that is operating as the primary constraint on the volumes of E85 sold, and to a lesser extent the relative price of E85 and E10.

Many stakeholders provided comments on how the number of retail stations offering E85 could grow through the end of 2017. Most pointed to a combination of USDA's Biofuels Infrastructure Partnership (BIP) program, the ethanol industry's Prime the Pump program, and ongoing efforts independent of these two programs. Parties representing gasoline marketing and retail, in contrast, generally repeated the concerns that they raised in the 2014–2016 final rule about costs for new infrastructure and low expected profit margins in support of their view that the number of retail stations offering E85 would grow slowly. Several stakeholders pointed to specific examples of retail stations that had stopped offering E85 due to poor sales.

Based on the information provided by stakeholders and other information that became available following release of the NPRM, we believe that the BIP and Prime the Pump programs will drive nearly all growth in E85 stations through the end of 2017, with far less growth occurring through independent efforts. As described in a memorandum to the docket, we believe that an annual average of about 4,300 retail stations can offer E85 in 2017.[125] This is a significant increase in comparison to the 3,200 that we projected would offer E85 in 2016 in the 2014–2016 final rule, but still

[125] "Projections of retail stations offering E15 and E85 in 2017," memorandum from David Korotney to docket EPA–HQ–OAR–2016–0004.

a relatively small number of stations compared to the estimated 150,000 retail stations nationwide.

In order to estimate reasonably attainable sales volumes of E85 in 2017, it is also necessary to estimate the volume of E85 likely to be sold at each retail station that offers it. Recognizing this, stakeholders provided comments on the aforementioned analysis of the relationship between E85 sales volumes at retail and E85 price discount derived from publically available data from six states. Refiners generally dismissed the value of the data used in this analysis, saying that the uncertainty within the data and questions about its representativeness for the nation as a whole made it an improper basis for future projections. They instead suggested that E85 use in 2017 should be based only on an extrapolation of E85 supply trends from the previous few years. We disagree. The data used for the analysis demonstrated statistically significant correlations between E85 sales volumes and E85 price discounts, and represented between 21% and 31% of all stations in the U.S. which offered E85.[126] Moreover, their suggested extrapolation from historical data would insufficiently account for the influence of both the RFS program itself and programs such as BIP and Prime the Pump, and would also be based on historical estimates of E85 supply using EIA data that, as described above, we believe are likely to be inaccurate.

Ethanol proponents recognized the value of the available data in developing correlations between E85 sales at retail and E85 price discounts. However, they provided critiques of the analyses we had conducted for the 2014–2016 final rule, and they also had alternative views on the application of the resulting correla-

[126] Range depends on the month and year.

tions. Comments provided by these stakeholders generally fell into broad areas:

- The data should be represented by nonlinear rather than linear correlations
- Estimates of E85 use derived from the correlations should be based on substantial extrapolations beyond the limits of the data, *i.e.* using much higher E85 price discounts than have occurred in the past

Some stakeholders conducted their own analyses of the data wherein they employed additional statistical techniques to attempt to more precisely determine the nature of the relationship between E85 sales volumes and E85 price discounts. These included such things as adding seasonal and annual categorical variables into the correlations and an investigation into different nonlinear functional forms.

In light of the comments provided by these stakeholders, we determined that the analyses conducted for the 2014–2016 final rule should be updated. Not only is additional data now available for the six states included in the analyses, but more rigorous statistical methods can be employed to more precisely determine the relationship between E85 sales volumes and E85 price discount, including whether a nonlinear correlation is appropriate. As described in a memorandum to the docket, our revised analyses indicate that a weak nonlinear relationship can be discerned in the data, and that it does provide a small increase in the explanatory power of the curve fit.[127]

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[127] "Updated correlation of E85 sales volumes with E85 price discount," memorandum from David Korotney to docket EPA–HQ–OAR–2016–0004.

In addition to an estimate of the number of retail stations that may offer E85 in 2017, the use of a correlation between E85 sales volumes and E85 price discount to estimate reasonably attainable volumes of E85 for 2017 requires that we estimate an E85 price discount that would be reasonable for 2017. Again, stakeholders were strongly divided on what E85 price discount may be attainable in 2017. Refiners typically said that an E85 price discount beyond energy parity (about 22% below the price of E10) was not supportable based on historical data and pointed to EPA's analyses showing that a sizable portion of the RIN value is not passed on to retail customers, diluting the impact of RIN prices on E85 prices. Ethanol proponents instead said that historical E85 price discounts should not be used as a gauge of what future E85 price discounts could be under the influence of higher RFS program standards. They discounted the limitations associated with the pass-through of RIN values to retail customers, arguing that if EPA set the standards high enough, the resulting higher RIN prices would result in significantly discounted retail pricing for E85 at the retail level. Some commenters presented examples of individual stations or regions where it appeared the RIN value was being passed-through to a greater degree to support their statements, however EPA does not believe these examples are representative of retailer behavior across the country.[128]

There is no straightforward mechanism for precisely identifying an E85 price discount for use in assessing 2017 ethanol supply. While some stakeholders provided examples of E85 price discounts that could be reached under specific assumed RIN prices and assumed RIN

[128] For a further discussion of these comments, see Section 2.3.8.2 of the Response to Comment document.

value pass-through to retail customers, such examples were purely speculative and provided no method for determining the E85 price discount that is likely to be reasonably attainable in 2017 given the E85 retail prices we have observed to date and the history of the fuels market.

In order to identify an E85 price discount that could be reasonably be assumed for the nation as a whole in 2017, we continue to believe that an investigation of E85 price discounts reached in the past is both less speculative than the suggestions made by ethanol proponents in their comments and more consistent with commonly accepted approaches to data analysis. However, we also do not believe that the average levels achieved in the past are sufficiently representative of what could be expected to occur in the future under the influence of the RFS program. As described in a memorandum to the docket that we published with the NPRM, the monthly average E85 price discount has rarely exceeded energy parity (about 22%), and the highest 12-month average retail E85 price discount has been significantly lower.[129]

[129] "Estimating achievable volumes of E85," memorandum from David Korotney to docket EPA–HQ–OAR–2016–0004. Note that this memorandum was published with the NPRM on May 31, 2016, and with the exception of the discussion of historical E85 price reductions is largely supplanted by memoranda published with this final rule. See in particular "Estimates of E15 and E85 volumes in 2017," memorandum from David Korotney to docket EPA–HQ–OAR–2016–0004.

TABLE V.B.1.iii–1—E85 PRICE DISCOUNTS BETWEEN 2012 AND EARLY 2016

	Fuels Institute	E85prices.com	AAA
Highest E85 price discount in a single month	21.1% (May 2015)	23.7% (Oct 2014)	24.1% (Apr 2015). 18.7% (Oct 2014–Sep 2015).
Highest 12-month average E85 price discount	16.0% (Sep 2014–Aug 2015).	19.6% (Sep 2014–Aug 2015).	24.1% (Apr 2015). 18.7% (Oct 2014–Sep 2015).

In that memorandum we indicated our belief that achieving energy parity for a full year would be unprecedented, but appears to be within the capabilities of the market given the historical values shown above. E85 price discounts higher than energy parity that were suggested by some stakeholders in their comments have not been achieved in the past for any notable length of time, and thus, we believe, are not likely for all of 2017. They may, however, occur in future years as the number of retail stations offering E85 increases and competition between them drives E85 prices down. For the purposes of this final rule, we have used an E85 price discount of 22% in estimating the supply of E85 in 2017.

Some stakeholders pointed to a statement in the NPRM which said ". . . an increase in the nationwide average E85 price reduction to 30% would be unprecedented," and then argued that EPA had not provided any justification for expecting this level to be sustaina-

ble for a full year.[130] We not that E85 price discounts have reached 30% in the past, albeit locally and for short time periods. However, we did not propose using an E85 price discount of 30% in the determination of the proposed 2017 volume requirement for total renewable fuel, but only provided it as one of several examples for how the market might respond.

Combining the updated correlation between E85 sales volumes and E85 price discounts with estimates for the number of retail stations that can offer E85 in 2017 and a reasonably attainable E85 price discount of 22%, we have determined that supply of about 275 million gallons of E85 is reasonably attainable in 2017, resulting in about 182 million gallons of ethanol more than would be supplied if that portion of the gasoline pool were E10. This level of E85 supply is an increase of almost 40% in just one year from the 200 million gallons that we believed could be reached in 2016, primarily reflecting the significant increase in the number of stations projected to offer E85 in 2017 as a result of USDA's BIP program and the ethanol industry's Prime the Pump program.

iv. Total Ethanol

The total supply of ethanol in 2017 is a function of the respective volumes of E10, E15, and E85, while accounting for some E0. Assuming that the total demand for gasoline energy is independent of the amounts of each of these types of fuel, estimating the supply of E0, E15, and E85 that are attainable can be used to derive the supply of E10.

Several stakeholders commented that we should use a more recent version of EIA's Short-Term Energy

[130] See discussion at 81 FR 34790.

Outlook (STEO) than the April, 2016 version we used in the NPRM to estimate gasoline demand in 2017. We agree that we should use updated EIA data. For this final rule we have used the October, 2016 version, which projects a total gasoline energy demand of 17.29 Quadrillion Btu.[131] Based on estimates of E0, E15, and E85 supply for 2017 as discussed in previous sections, the E10 volume and resulting total ethanol supply can be calculated.

TABLE V.B.1.iv–1—GASOLINE VOLUMES USE TO DETERMINE REASONABLY ATTAINABLY ETHANOL SUPPLY IN 2017

	Fuel volume (mill gal)	Ethanol volume (mill gal)	Energy (Quad Btu)
E0	200	0	0.025
E10	142,480	14,248	17.151
E15	728	109	0.086
E85 a	275	204	0.026
Total	143,683	14,561	17.288

Based on this assessment, we estimate an ethanol supply for 2017 of 14.56 billion gallons. While the market will ultimately determine the extent to which compliance with the annual standards is achieved through the use of greater volumes of ethanol versus other, non-ethanol renewable fuels, we nevertheless believe that this ethanol volume represents a reasona-

[131] Derived from Table 4a of the STEO, converting consumed gasoline and ethanol projected volumes into energy using conversion factors supplied by EIA. *http://www.eia.gov/forecasts/steo/archives/oct16.pdf.*

Excludes gasoline consumption in Alaska. For further details, see "Calculation of final % standards for 2017" in docket EPA–HQ–OAR–2016–0004.

bly attainable level that takes into account the ability of the market to respond to the standards we set and the constraints to fuel supply that we have noted.

One stakeholder said that EIA's projections of future gasoline demand as provided in the STEO have been too low in previous years, and that EPA should account for this underestimate when making projections of the volume of ethanol that can be achieved in 2017. We investigated this issue and determined that while EIA projections of future gasoline demand do contain uncertainty, they are not consistently above or below actual gasoline demand.[132]

In response to the NPRM, some stakeholders reiterated their concerns from the 2014–2016 final rule that EPA's methodology rewarded obligated parties for their recalcitrance in not investing in the infrastructure needed to substantially increase ethanol use above the E10 blendwall. In taking these positions, stakeholders cited both the statutory requirement that obligations be placed on "refineries, blenders, and importers, as appropriate" and EPA's regulations which (with limited exceptions) further narrow the applicability of the obligations to producers and importers of gasoline and diesel. As described in the 2014–2016 final rule, we agree that the statutory language, in combination with the regulatory structure, generally places the responsibility on producers and importers of gasoline and diesel to ensure that transportation fuel sold or introduced into commerce contains the required volumes of renewable fuel. Obligated parties have a variety of options available to them, both to increase volumes in the near term and the longer term. The standards

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[132] "Accuracy of STEO gasoline demand projections," memorandum from David Korotney to docket EPA–HQ–OAR–2016.

that we are establishing today reflect both the responsibility placed on obligated parties as well as the short-term activities available to them, and we expect obligated parties to be taking actions now that will help to increase renewable fuel volumes in future years. However, as pointed out by some refiners in response to the NPRM, this general responsibility does not require obligated parties to take actions specific to E15 and/or E85 infrastructure, as the RFS program does not require any volumes of ethanol specifically. We continue to believe that as obligated parties procure and blend renewable fuels into transportation fuel, or purchase RINs from those who do so, the demand for RINs will drive demand for renewable fuel, thereby stimulating every participant in the fuels industry, including obligated parties themselves, to increase their activities to supply it.[133] Moreover, the reductions in statutory volumes reflected in this action are largely the result of the inability to date of renewable fuel producers to commercialize the volumes of cellulosic biofuel envisioned in the statute. This fact cannot reasonably be attributed to actions or inactions of obligated parties.

One stakeholder said that the EPA should target a poolwide gasoline ethanol content of less than 10% in part because blenders need a buffer to account for uncertainty associated with ethanol content testing and downstream mixing in the fungible distribution system. This stakeholder suggested that blenders have historically aimed to blend at less than 10% ethanol, and that as a result EPA should set standards con-

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[133] The EPA Administrator signed the Proposed Denial of Petitions for Rulemaking to Change the RFS Point of Obligation on November 10, 2016. More information can be found at *https://www.epa.gov/renewable-fuel-standard-program/response-petitions-reconsideration-rfs2-rule-change-point-obligation.*

sistent with this practice. We investigated this issue using survey data collected by the Alliance of Automobile Manufacturers for 2011–2015 and determined that the average ethanol content of all gasoline that contained more than de minimis levels of ethanol was 9.80%.[134] This estimate is based on the use of ASTM test method D–5599, which measures only the alcohol portion of the gasoline, not any denaturant that would have been included with the ethanol before it was blended into gasoline. Since the denaturant portion of ethanol is typically about 2%, ethanol that is blended into gasoline contains about 98% ethanol.[135] When blended into gasoline, therefore, the E98 would result in a gasoline-ethanol blend containing about 9.8% pure ethanol, or 10.0% denatured ethanol. Based on this investigation, we have determined that it is appropriate to continue assuming that the denatured ethanol content of E10 is 10%.

2. Biodiesel and Renewable Diesel

While the market constraints on ethanol supply are readily identifiable, it is more difficult to identify and assess the market components that may limit potential growth in the use of all qualifying forms of biodiesel and renewable diesel in 2017. Therefore, as discussed in the introduction to Section V.B, after estimating the supply of ethanol in 2017, and taking into account the estimates of non-ethanol cellulosic biofuel supply discussed in Section III.D above and estimates of other non-ethanol renewable fuel supply discussed in Section IV.B.3, we considered whether the supply of total bio-

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[134] Under the rounding method required under 40 CFR 80.9, ethanol concentrations of between 8.6% and 10.5% inclusive would qualify for the 1psi waiver.

[135] See definition of "renewable fuel" at 40 CFR 80.1401.

diesel and renewable diesel would be adequate to satisfy a requirement of 19.28 billion gallons.

In Section V.A we described how use of the cellulosic waiver authority to provide a volume reduction for total renewable fuel that equals that provided for advanced biofuels yields a volume of 19.28 billion gallons. In addition to the ethanol volume discussed in Section V.B.1.iv above, cellulosic biogas can also contribute to this total volume of renewable fuel, as described more fully in Section III.D. While other renewable fuels such as naphtha, heating oil, butanol, and jet fuel can be expected to continue growing over the next year, collectively, we expect them to contribute considerably less than ethanol to the total volume of renewable fuel that can be supplied in 2017. These were discussed in Section IV.B.3. Based on these estimates of supply, about 2.9 billion gallons of biodiesel and renewable diesel would be needed in order to meet a total renewable fuel volume requirement of 19.28 billion gallons.

TABLE V.B.3–1—DETERMINATION OF VOLUME OF BIODIESEL AND RENEWABLE DIESEL NEEDED IN 2017 TO ACHIEVE 19.28 BILLION GALLONS OF RENEWABLE FUEL

[Million ethanol-equivalent gallons except as noted]

Total renewable fuel volume	19,280
Ethanol	14,561
Non-ethanol cellulosic biofuel	299
Other non-ethanol renewable fuels[a]	50
Biodiesel and renewable diesel needed (ethanol-equivalent volume/physical volume)	4,370/2,819

As discussed in the final rule establishing the RFS standards for 2014–2016, there are several factors that may, to varying degrees and at different times, limit the growth of biodiesel and renewable diesel, including local feedstock availability, production and import capacity, and the ability to distribute, sell, and use increasing volumes of biodiesel and renewable diesel. We continue to believe that the supply of biodiesel and renewable diesel as transportation fuel in the United States, while growing, is not without limit.

In the proposed rule we discussed the current status of each of a number of the factors that impact the supply of biodiesel and renewable diesel used as transportation fuel in the United States. We received a number of comments on our assessment of these factors. Some of these comments supported the proposed findings in the NPRM and agreed that EPA had sufficiently accounted for the factors that may constrain the growth of biodiesel and renewable diesel in 2017,

[a] Includes naphtha, heating oil, butanol, and jet fuel. See further discussion in Section IV.B.3.

while others argued that EPA had overstated these constraints and the degree to which they would limit the supply of biodiesel and renewable diesel in 2017. As stated in our proposed rule, we expect that the growth in the supply of biodiesel and renewable diesel will largely be driven by incremental developments across the marketplace to steadily increase volumes. However, after a careful review of the information submitted as comments on our proposed rule, we believe that the reasonably attainable supply of biodiesel and renewable diesel in 2017 is higher than we had proposed.

Based on our assessment of the various factors which affect the supply of biodiesel and renewable diesel, we have determined that 2.9 billion gallons of biodiesel and renewable diesel (including both advanced and conventional biofuel) can be reasonably attained in 2017, up from the 2.5 billion gallons that was projected for 2016. This volume is significantly higher than the previously established BBD standard of 2.0 billion gallons for 2017, as we believe additional volumes of both conventional and advanced biodiesel and renewable diesel can be supplied to the United States in 2017 (see Section VI for further discussion of the BBD standard). The following sections discuss our expectations for developments in key areas affecting the supply of biodiesel and renewable diesel in 2017.

i. Feedstock Availability

In previous years, the primary feedstocks used to produce biodiesel and renewable diesel in the United States have been vegetable oils (primarily soy, corn, and canola oils) and waste fats, oils, and greases. We anticipate that these feedstocks will continue to be the primary feedstocks used to produce biodiesel and renewable diesel in 2017. Global supplies of these oils are

significant, however they are expected to increase relatively slowly over time, as vegetable oil production increases primarily with increases in crop yields and the remaining untapped supply of recoverable waste oils diminishes. Additional supplies of feedstocks could be produced by increasing the planted acres of oilseed crops (soy, canola, etc.), but with the exception of palm oil most vegetable oils are produced as a co-product of the production of animal feed and increased demand for vegetable oil is unlikely to result in a significant increase in oilseed crop planting absent growing demand for the animal feed. While some have suggested that industries that compete with the biodiesel and renewable diesel industry for renewable oil feedstocks will turn to alternative feedstock sources, resulting in greater feedstock availability for biodiesel and renewable diesel producers, such a shift in renewable oil feedstock use would not result in an increase in the total available supply of renewable oil feedstocks as those volumes will have to be backfilled. As a result, this would not alter the fundamental feedstock supply dynamics for biodiesel and renewable diesel production.

We anticipate that there will be a modest increase in the available supply of feedstocks that can be used to produce biodiesel and renewable diesel in 2017. Oil crop yield increases over the next few years are expected to be relatively modest, and significant increases in the planted acres of oil crops are expected to be limited by competition for arable land from other higher value crops and demand for the animal feed co-products produced by most oilseed crops.[136] The recovery of corn oil

[136] Because most oilseed crops are grown primarily to provide livestock feed, the planted acres of these crops are expected to increase in response to demand for livestock feed rather than demand for renewable vegetable oils.

from distillers grains and the recovery of waste oils are already widespread practices, limiting the potential for growth from these sectors compared to what has been able to occur over recent years as these new markets were being tapped. In light of this, we do not believe that the availability of biodiesel and renewable diesel feedstocks is without limit. It is also possible that biodiesel production at some *individual* facilities, especially those built to take advantage of low-cost, locally available feedstocks, may be limited by their access to affordable feedstocks in 2017, rather than their facility capacity, even if the global supply of feedstocks is sufficient to enable additional production.

As discussed in further detail in Section IV.B.2, the availability of qualifying advanced biodiesel and renewable diesel feedstocks may also be limited (even if the total supply of feedstocks is sufficient), and large increases in advanced biodiesel and renewable diesel demand could lead to significant feedstock substitution rather than increased production of advanced feedstocks. Unreasonably high demand for biodiesel and renewable diesel could also cause undesirable market disruptions. Large increases in the available supply of biodiesel and renewable diesel in future years will likely depend on the development and use of new, high-yielding feedstocks, such as algal oils or alternative oilseed crops. Based on currently available information, we believe that the availability of feedstocks (including both feedstocks that can be used to produce advanced and conventional biodiesel and renewable diesel) is unlikely to significantly limit the supply of total biodiesel and renewable diesel used for transportation fuel in the United States in 2017, when considering the standards we are establishing in this rule. This is largely the case because we believe that other constraints, discussed below, will likely constrain the distri-

bution and use of biodiesel and renewable diesel before the feedstock limits have been reached.

ii Biodiesel and Renewable Diesel Production Capacity

The capacity for all registered domestic biodiesel production facilities is approximately 3.5 billion gallons.[137] The capacity for all registered domestic renewable diesel production facilities is approximately 0.7 billion gallons.[138] Active production capacity is lower, however, as a number of registered facilities were idle in 2015 and 2016. The capacity for all domestic biodiesel and renewable diesel production facilities that generated RINs in 2015 or 2016 is approximately 3.1 billion gallons.[139] While idled production facilities may be brought online, doing so would likely require sufficient time to re-staff the production facilities, make any necessary repairs or upgrades to the facility, and source the required feedstocks. Additionally, there are many factors that may limit biodiesel or renewable diesel production at any given facility to a volume lower than the facility capacity.[140] As with feedstock availability, we do not expect that production capacity at registered facilities will limit the supply of biodiesel/renewable diesel for use as transportation fuel in the United States in 2017. Foreign registered biodiesel and renewable diesel facilities represent a significant volume of

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[137] "Biodiesel and Renewable Diesel Registered Capacity (October 2016)", Memorandum from Dallas Burkholder to EPA Docket EPA–HQ–OAR–2016–0004.

[138] Ibid.

[139] Ibid.

[140] Due to the relatively low capital cost of biodiesel production facilities, many facilities were built with excess production capacity that has never been used.

additional potential production that could be made available to markets in the United States. While the total registered production capacity of foreign biodiesel and renewable diesel is significant, supply of biodiesel and renewable diesel from these facilities in 2017 may be impacted by the capacity to import these fuels, discussed in the following section.

iii Biodiesel and Renewable Diesel Import Capacity

Another important market component in assessing biodiesel and renewable diesel supply is the potential for imported volumes and the diversion of domestically produced biodiesel and renewable diesel exports to domestic uses. In addition to the approximately 560 million gallons imported into the U.S. in 2015, there were about 90 million gallons exported from the United States to overseas markets. One commenter used biodiesel import data from January 2012 through April 2016 to estimate that, based on the highest annual volume of biodiesel imports in the 55 cities that reported biodiesel imports during this time period, the United States current import capacity for biodiesel at these cities is approximately 659 million gallons.[141] Actual import capacity is likely to exceed this volume, as this estimate relied solely on historic import volumes, rather than an assessment of the capacity of the infrastructure that could be used to import biodiesel at these 55 cities. It is also likely that under the right circumstances

[141] See comments from Renewable Energy Group, Inc. (EPA–HQ–OAR–2016–0004–3477). REG used data from the Energy Information Agency in their assessment, and therefore did not capture renewable diesel imports. The total import capacity of biodiesel and renewable diesel therefore likely exceeds the volumes estimated here.

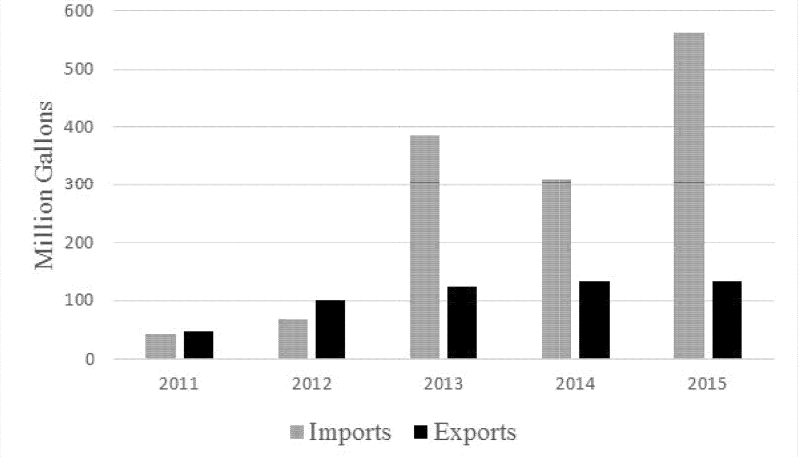
there are additional locations through which biodiesel could be imported.

Given the right incentives, it may be possible to increase net biodiesel and renewable diesel imports, either by redirecting a portion of the biodiesel currently consumed in foreign countries to be exported to the U.S. and/or by reducing the volume of biodiesel exported from the United States. However, the amount of biodiesel and renewable diesel that can be imported into the United States is difficult to predict, as the incentives to import biodiesel and renewable diesel to the U.S. are a function not only of the RFS and other U.S. policies and economic drivers, but also those in the other countries around the world. These policies and economic drivers are not fixed, and change on a continuing basis. Over the years there has been significant variation in both the imports and exports of biodiesel and renewable diesel as a result of varying policies and relative economic conditions (See Figure V.B.2.iii–1 below). Increasing biodiesel and renewable diesel imports significantly beyond the 659 million gallons estimated above would require a clear signal to the parties involved that increasing imports will be economically advantageous and the potential re-negotiations of existing contracts. It may also require upgrades and expansions a U.S. import terminals. It is possible, but uncertain, whether higher RFS standards could provide such a signal. Also, to the degree that higher volumes of imported biodiesel or renewable diesel to the United States come at the expense of consumption in the rest of the world, the environmental benefits of this increased volume are expected to be modest.[142] In this final rule we have no projected biodiesel and renewable diesel

[142] See Section IV.B.2 for a further discussion of this issue.

imports separately from domestically produced biodiesel and renewable diesel, since these fuels are subject to the same potential limitation (*e.g.,* feedstock availability, distribution and use constraints, etc.).[143] We do believe, however that the standards in this final rule will result in an increase in biodiesel and renewable diesel imports consistent with the general trend observed in previous years, and our projection of the supply of these fuels in 2017 includes this expected increase.

Figure V.B.2.iii-1 1—
Biodiesel and Renewable Diesel
Imports and Exports (2012-2015)[a]



[a] Import data reported through the EMTS system. Export data sourced from EIA (http://www.eia.gov/dnav/pet/pet_move_expc_a_EPOORDB_EEX_mbbl_a.htm)

[143] As discussed in Section IV.B.2, we expect an increase of approximately 100 million gallons of advanced biodiesel, advanced renewable diesel, and/or feedstocks that can be used to produce these fuels. We are also projecting an increase of 100 million gallons of conventional biodiesel and renewable diesel. Historically the majority of this fuel has been imported (see Table IV.B.2–2), and we expect this will again be the case in 2017.

iv. Biodiesel and Renewable Diesel Distribution Capacity

While biodiesel and renewable diesel are similar in that they are both diesel fuel replacements produced from the same types of feedstocks, there are significant differences in their fuel properties that result in differences in the way the two fuels are distributed and consumed. Renewable diesel is a pure hydrocarbon fuel that is nearly indistinguishable from petroleum-based diesel. As a result, it can generally use the existing distribution infrastructure for petroleum diesel and there are no significant constraints on its growth with respect to distribution capacity. Biodiesel, in contrast, is an oxygenated fuel rather than a pure hydrocarbon. It historically has not been distributed through most pipelines due to contamination concerns with jet fuel, and may require specialized storage facilities, additives, or blending with petroleum diesel to prevent the fuel from gelling in cold temperatures. In the past few years, however, a limited number of pipelines that do not carry jet fuel have begun shipping biodiesel blends.[144] Recent changes to the ASTM jet fuel specifications allowing up to 50 ppm biodiesel,[145] as well as experience gained in isolating jet fuel from biodiesel in pipelines may open new opportunities for distributing biodiesel blends by pipeline in future years. A number of studies have investigated the impacts of cold temperatures on storage, blending, distribution, and use of

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[144] See NBB comments on the Proposed Rule (EPA–HQ–OAR–2016–0004–2904).

[145] While the ASTM specification generally limits biodiesel contamination in jet fuel to 50 ppm, up to 100 ppm biodiesel may be allowed on an "emergency basis." Subcommittee J intends to consider a ballot to increase the limit of biodiesel in jet fuel to 100 ppm (See ASTM D1655).

biodiesel, along with potential mitigation strategies.[146] [147] [148] Information provided by the National Biodiesel Board, as well as comments on our proposed rule, indicate that some retailers offer biodiesel blend levels that differ in the summer and winter to account for these cold temperature impacts.[149] [150] While cold temperatures can cause problems with the distribution and use of biodiesel, the experiences of states such as Minnesota and Illinois, where biodiesel is used year-round despite cold winter weather, demonstrates that these challenges can be overcome with the proper handling of biodiesel.[151] [152]

The infrastructure needed to store and distribute biodiesel has generally been built in response to the local demand for biodiesel. In some cases, the infrastructure must be expanded to bring biodiesel to new markets

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[146] "Biodiesel Cloud Point and Cold Weather Issues," NC State University & A&T State University Cooperative Extension, December 9, 2010.

[147] "Biodiesel Cold Weather Blending Study," Cold Flow Blending Consortium.

[148] "Petroleum Diesel Fuel and Biodiesel Technical Cold Weather Issues," Minnesota Department of Agriculture, Report to Legislature, February 15, 2009.

[149] *http://biodiesel.org/using-biodiesel/finding-biodiesel/retail-locations/biodiesel-retailer-listings*.

[150] See comment from CountryMark on the proposed rule (EPA–HQ–OAR–2016–0004–1826).

[151] Biodiesel is used year-round in Minnesota and Illinois in large part due to state mandates and tax credits respectively, in addition to the incentives provided by the RFS program.

[152] "Report to the Legislature Annual Report on Biodiesel," Kevin Hennessy, Minnesota Department of Agriculture. January 15, 2016. Available online <*https://www.leg.state.mn.us/docs/2016/mandated/ 160162.pdf*>.

and additional infrastructure may also be needed to increase the supply of biodiesel in markets where it is already being sold. In other cases, sufficient infrastructure exists to increase the local supply of biodiesel and biodiesel blends using existing infrastructure.

Another factor potentially constraining the supply of biodiesel is the number of terminals and bulk plants that currently distribute biodiesel. A study conducted on behalf of the NBB used OPIS data to calculate that biodiesel is currently offered at fuel terminals in 369 of the 563 cities (approximately 66%) that have terminals providing gasoline, diesel and/or biodiesel.[153] In addition to these terminals, biodiesel is often distributed from bulk plants or directly from biodiesel production facilities. At present, the Web site Biodiesel.org lists over 600 distribution facilities reported as selling biodiesel either in pure form or blended form, the majority of which are bulk plants.[154] [155] Biodiesel production facilities also serve as important distribution centers for biodiesel. According to a survey conducted by NBB, 30% of the biodiesel produced at facilities that responded

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[153] See Attachment 6 of the comments submitted by the National Biodiesel Board (EPA–HQ–OAR–2016–0004–2904). The report lists 453 cities with terminals that offer gasoline and diesel, 369 that offer biodiesel or biodiesel blends, and 259 that offer both petroleum diesel and biodiesel.

[154] List of biodiesel distributers from Biodiesel.org Web site (*http://biodiesel.org/using-biodiesel/finding-biodiesel/locate-distributors-in-the-us/distributors-map*). Accessed 10/8/15. This list does not include terminals that distribute biodiesel or biodiesel blends.

[155] Bulk plants are much smaller than major gasoline and diesel distribution terminals, and generally receive diesel and biodiesel shipped by trucks from major terminals.

to the survey is sold directly to retailers.[156] Direct sales to retail stations provide a significant opportunity for biodiesel producers to access local markets without first transporting biodiesel to a terminal or bulk plant for further distribution.

While there are a large number of biodiesel distribution points in the United States, including terminals, bulk plants, and biodiesel production facilities, the majority of these distribution points appear to be concentrated in the Midwest and most of the population centers of the country. These same areas consume the majority of the diesel fuel in the United States, and thus have the greatest potential markets for biodiesel. For the biodiesel market to continue to expand, it must either increase the volume of biodiesel sold in markets where it is already being sold, or expand into markets that currently do not have access to biodiesel. Either of these methods for expanding the biodiesel market will likely require additional infrastructure. Transportation of the biodiesel from production facilities to retail fuel stations, whether directly or through terminals and bulk plants, will also need to be expanded for volumes to continue to grow. This will likely require additional trucks and/or rail cars,[157] as biodiesel and biodiesel blends are currently generally not transported in common carrier pipelines. If recent changes to the ASTM specifications for jet fuel (discussed above) allow

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[156] See Attachment 6 of the comments submitted by the National Biodiesel Board (EPA–HQ–OAR–2016–0004–2904).

[157] Biodiesel can also be transported by barge, however we expect that a limited number of biodiesel production facilities have access to barge or ocean transportation. Survey data collected by NBB indicates that only 7% of biodiesel is currently transported by barge (see NBB comments on the proposed rule, attachment 6; EPA–HQ–OAR–2016–0004–2904).

for greater volumes of biodiesel blends to be shipped by pipeline this would be a potentially significant change, as it would likely allow for biodiesel distribution at terminals that currently do not have access to biodiesel blends and could significantly reduce the cost of distributing biodiesel. Distributing biodiesel via truck or rail results in high fuel transportation costs (relative to petroleum derived diesel, which is generally delivered to terminals via pipelines), which may impact the viability of adding biodiesel distribution capacity at a number of existing terminals or bulk plants. It is likely that until and unless significant volumes of biodiesel blends are transported by pipeline, increasing the biodiesel market will require greater investment per volume of biodiesel supplied than in the past, as the new biodiesel distribution facilities will generally have access to smaller markets than the existing facilities, or will face competition as they seek to expand into areas already supplied by existing distribution facilities.

The net result is that the expansion of the distribution infrastructure required to transport biodiesel to distribution points and retail stations and store it at these locations will be necessary, whether biodiesel consumption is increased through additional consumption in existing markets, expansion to new markets, or some combination of the two. While this is not an insurmountable challenge, it will require time and investment, and may limit the potential for the rapid expansion of the biodiesel supply. In previous years the expansion of biodiesel distribution and storage has largely been enabled by high volume diesel retailers, such as truck stops and travel centers. We believe this is likely to be the case in the near future as well, however the rate of increase of biodiesel and renewable diesel at these locations may slow as many are already

supplying significant volumes of biodiesel and renewable diesel.

The distribution of biodiesel and biodiesel blends is an area in which the biodiesel industry has made steady progress over time, and we anticipate that this progress can and will continue into the future, particularly with the ongoing incentive for biodiesel growth provided by the RFS standards. This is especially true to the degree that excess biodiesel transportation infrastructure (trucks, rail cars, barges, etc.) and storage capacity currently exist. Low oil prices, however, may present a challenge to the expansion of biodiesel distribution infrastructure, since the profitability of such projects in current market conditions is largely dependent on government support such as the biodiesel blenders tax credit and RFS RIN value.[158] Since some investors view such government supports as inherently uncertain they may be hesitant to invest in new infrastructure to enable additional biodiesel distribution at a time when diesel prices are low. As with many of these potential supply constraints, increasing biodiesel storage and distribution capacity will require time and investment, potentially limiting the potential growth in 2017 and future years.

v. Biodiesel and Renewable Diesel Retail Infrastructure Capacity

For renewable diesel, we do not expect that refueling infrastructure (*e.g.,* refueling stations selling renewable diesel blends) will be a significant limiting factor in 2017 due to its similarity to petroleum-based diesel and the relatively small volumes expected to be supplied in the United States. The situation is different, however,

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[158] See comments from NATSO (EPA–HQ–OAR–2016–0004–1830).

for biodiesel. Biodiesel is typically distributed to retail stations in blended form with diesel fuel as blends varying from B2 up to B20, and in some narrow cases at levels exceeding B20. Biodiesel blends up to and including B20 can be sold using existing retail infrastructure, and generally do not require any upgrades or modifications at the retail level. Small retailers of diesel fuel, however, generally have only a single storage tank for diesel fuel, and can therefore generally only offer a single biodiesel blend. We expect that many of the retailers in this situation will be hesitant to offer biodiesel blends above B5, as doing so would mean only selling a fuel that is not recommended for use by some vehicle and engine manufacturers (see following section for a further discussion of potential engine warranty issues).

Large diesel fuel retailers, such as truck stops and travel centers may have sufficient tankage to offer multiple blends of diesel fuel and/or biodiesel, should they choose to do so. Some of these large retailers have biodiesel blending infrastructure at their retail facilities, allowing them greater control over the blends of biodiesel sold at their stations. This is significant, as EIA estimates that 80% of all diesel fuel sold in the United States is sold through large and mid-sized truck stops, with 25% of the diesel fuel being sold through stations owned by the four largest on-highway diesel sellers.[159] As some of the highest volume truck stops have begun selling increasing volumes of biodiesel blends in recent years, it has allowed biodiesel volumes to grow quickly. These large truck stops and travel sellers sell significant volumes of biodiesel, and

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[159] Estimates of diesel fuel sales through various retailers from EIA Web site: *http://www.eia.gov/petroleum/gasdiesel/diesel_proc-methods.cfm.*

in many cases offer biodiesel blends higher than B5.[160] Further they have expressed an intention to expand their sales of biodiesel in future years.[161] We expect that in future years these large truck stops and travel centers will continue to be a primary location for biodiesel sales, and will likely look to expand biodiesel sales in the future where it is profitable to do so. In addition, many centrally fueled fleets that often consume large volumes of diesel fuel have increased their use of biodiesel blends.[162]

As discussed in the next section, biodiesel blends up to 5% may be legally sold as diesel fuel without the need for special labeling, and are approved for use in virtually all diesel engines. Because biodiesel blends up to B5 can be used in virtually all diesel engines and require no specialized infrastructure at refueling stations, and many large diesel retailers have demonstrated a willingness to offer biodiesel blends higher than B5, expanding the number of refueling stations offering biodiesel blends is therefore expected to be constrained less by resistance from the retail facilities themselves, and more by the presence of nearby wholesale distribution networks that can provide the biodiesel blends to retail at attractive prices. As discussed in the previous section, we expect this expansion will continue at a steady pace in 2017.

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[160] See information submitted by NBB in comments on the proposed rule (EPA–HQ–OAR–2016–0004–2904), pages 29–30.

[161] June 9, 2016 hearing statements from Musket Corporation, "Transcript for room Chicago," docket EPA–HQ–OAR–2016–0004.

[162] "Biodiesel Ranks First Among Fleets for Alt Fuel Use," *Biodiesel.org,* March 23, 2016. Available online <*http://biodiesel.org/news/news-display/2016/03/23/biodiesel-ranks-first-among-fleets-for-alt-fuel-use*>.

vi. Biodiesel and Renewable Diesel Consumption Capacity

Virtually all diesel vehicles and engines now in the in-use fleet have been warranted for the use of B5 blends. Both the Federal Trade Commission (FTC) and ASTM International (ASTM) specifications for diesel fuel (16 CFR part 306 and ASTM D975 respectively) allow for biodiesel concentrations of up to five volume percent (B5) to be sold as diesel fuel, with no separate labeling required at the pump. Biodiesel blends of up to 5% are therefore often indistinguishable from diesel fuel that is not blended with biodiesel.

In recent years an increasing number of vehicle and engine manufacturers have approved the use of biodiesel blends up to B20.[163] According to information submitted to EPA by NBB, over 30% of all diesel vehicles registered in the United States are approved to use biodiesel blends up to B20 by the vehicle and engine manufacturers.[164] The percentage of vehicles and engines approved by the manufacturers to use biodiesel blends up to B20 rises to over 50% for class 8 trucks, which use the majority of the diesel fuel in the United States.[165] This information indicates that while the potential consumption of biodiesel in blends that exceed B5 in vehicles and engines that are approved for the use of this fuel is significant, such approval is not universal. For the nearly 70% of vehicles and engines that are not approved to use biodiesel blends greater than B5, using higher level blends could potentially void the

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[163] See, for example, Paccar announcement approving all engines to use B20 blends.

[164] Information on the number of vehicles approved to use B20 from a presentation by NBB to EPA staff on July 28, 2016.

[165] Ibid.

warranties of the engines if the damage to the engine damage is attributable to the fuel that was used. While many of the vehicles that are not approved to use biodiesel blends greater than B5 are likely no longer covered by the manufacturer's warranty, the owners of these vehicles may still be hesitant to use a fuel that was not approved for use in their vehicle.

In light of the ability of effectively all diesel engines to use biodiesel blends at the B5 level, the increasing number of diesel engines approved to use biodiesel blends up to B20, and the compatibility of renewable diesel with in-use diesel engines, we believe the market will be capable of consuming 2.9 billion gallons of biodiesel and renewable diesel in 2017. However, to achieve this level of consumption we believe it will become increasingly necessary to sell higher-level biodiesel blends, greater quantities of renewable diesel, and/or additional volumes of biodiesel in qualifying nonroad applications. Even if every gallon of diesel sold in the United States in 2017 contained 5% biodiesel, the total volume of biodiesel consumed would only reach approximately 2.8 billion gallons.[166] When considering the potential availability of renewable diesel together with the use of biodiesel in non-road applications and higher level biodiesel blends, there are several scenarios that would enable the consumption of 2.9 billion gallons of biodiesel and renewable diesel. If we assume the availability of approximately 500 million gallons of renewable diesel in 2017 (approximately a 100 million gallon increase from 2015) and the use of 100 million gallons of biodiesel in qualifying nonroad

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[166] This estimate assumes 55.5 billion gallons of diesel fuel are used in the United States in 2016 (from the EIA's August Short Term Energy Outlook). It also assumes no biodiesel is used in blends greater than B5.

(such as agricultural and mining equipment) and heating oil applications, approximately 84% of the highway diesel pool in 2017 would have to be sold as a B5 blend to supply 2.9 billion gallons of biodiesel and renewable diesel in 2017.[167] If we further assume that 20% of all diesel fuel in the United States is sold at higher biodiesel blend levels averaging B10 (to account for the sales of higher blends at travel centers and in states with biodiesel blend mandates), only 54% of the remaining diesel pool would have to be blended with 5% biodiesel to enable the consumption of 2.9 billion gallons of biodiesel and renewable diesel. We believe these scenarios, along with the possibility for even greater volumes of biodiesel to be used in qualifying non-road applications and higher level biodiesel blends, demonstrate that 2.9 billion gallons of biodiesel and renewable diesel is reasonably attainable in the United States in 2017. EPA will continue to monitor the compatibility of the in-use vehicle fleet to use of biodiesel in future years as we assess potential constraints on increased volumes.

vii. Biodiesel and Renewable Diesel Consumer Response

Consumer response to the availability of renewable diesel and low-level biodiesel blends (B5 or less) has been generally positive, and this does not appear to be a significant impediment to growth in biodiesel and renewable diesel use. Because of its similarity to petroleum diesel, consumers who purchase renewable diesel are unlikely to notice any difference between renewa-

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[167] This estimate again assumes 55.5 billion gallons of diesel fuel are used in the United States in 2016 (from the EIA's August Short Term Energy Outlook) and no biodiesel is used in blends greater than B5.

ble diesel and petroleum-derived diesel fuel. Similarly, biodiesel blends up to B5 are unlikely to be noticed by consumers, especially since, as mentioned above, they may be sold without specific labeling. Consumer response to biodiesel blends is also likely aided by the fact that despite biodiesel having roughly 10 percent less energy content than diesel fuel, when blended at 5 percent the fuel economy impact of B5 relative to petroleum-derived diesel is a decrease of only 0.5%, an imperceptible difference. Consumer response has been further aided by the lower prices that many wholesalers and retailers have been willing to provide to the consumers for the use of biodiesel blends. The economic incentives provided by the biodiesel blenders tax credit and the RIN have made it possible for retailers to offer these blends at a lower price per gallon than diesel fuel that has not been blended with biodiesel despite the higher cost of production for biodiesel relative to petroleum based diesel, and the competition among diesel fuel retailers has generally led to these incentives being reflected in the retail price of biodiesel blends. The ability for retailers to offer biodiesel blends at competitive prices relative to diesel that does not contain biodiesel, even at times when oil prices are low, is a key factor in the growth in the supply of biodiesel and renewable diesel to date.

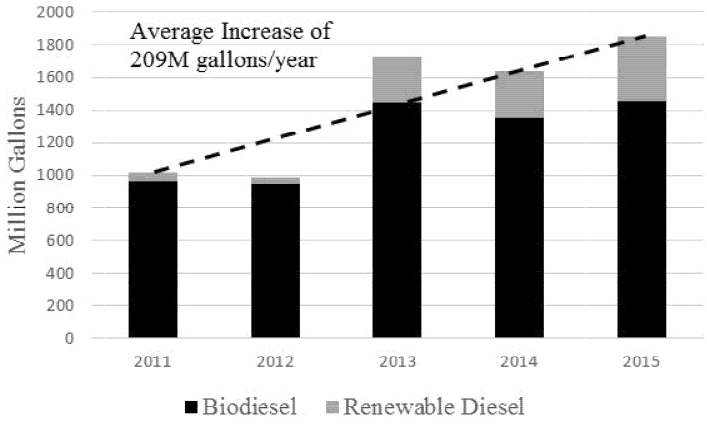
viii. Projected Supply of Biodiesel and Renewable Diesel in 2017

Due to the large number of market segments where actions and investments may be needed to support the continued growth of biodiesel blends, it is difficult to isolate the specific constraint or group of constraints that would be the limiting factor or factors to the supply of biodiesel and renewable diesel in the United States in 2017. Not only are many of the potential constraints

inter-related, but they are likely to vary over time. The challenges in identifying a single factor limiting the growth in the supply of biodiesel and renewable diesel in 2017 does not mean, however, that there are no constraints to the growth in supply.

A starting point in developing a projection of the available supply of biodiesel and renewable diesel in 2017 is a review of the volumes of these fuels supplied for RFS compliance in previous years. In examining the data, both the absolute volumes of the supply of biodiesel and renewable diesel in previous years, as well as the rates of growth between years are relevant considerations. The volumes of biodiesel and renewable diesel (including both D4 and D6 biodiesel and renewable diesel) supplied each year from 2011 through 2015 are shown below.

Figure V.B.2.viii-1
Biodiesel and Renewable Supply by Year (2011-2015)[a]



[a] Values represent current estimates of the net supply of biodiesel and renewable diesel (including conventional, advanced, and BBD biodiesel and renewable diesel) from EMTS, accounting for the production, import, and export of biodiesel and renewable diesel.

To use the historical data (shown in the figure above) to project the available supply of biodiesel and renewable diesel in 2017, we started with the volume expected to be supplied in 2016 (2.5 billion gallons), and then assessed how much the supply could be expected to increase in 2017 in light of the constraints discussed above. Using historic data is appropriate to the extent that growth in the year or years leading up to 2016 reflects the rate at which biodiesel and renewable diesel constraints can reasonably be expected to be addressed and alleviated in the future. In assessing the potential growth of biodiesel and renewable diesel in 2017 we believe this to be the case. There are many potential ways the historical data could be used to project the supply of biodiesel and renewable diesel in future years. Two relatively straightforward methods would be to use either the largest observed annual supply increase (743 million gallons from 2012 to 2013) or the average supply increase (209 million gallons from 2011 to 2015) to project how much biodiesel and renewable diesel volumes could increase over 2016 levels in 2017. We recognize that there are limitations in the probative value of past growth rates to assess what can be done in the future, however we believe there is significant value in considering historical data, especially in cases where the future growth rate is expected to be largely determined by the same variety of complex and inter-dependent factors that have factored into historical growth.

In projecting the available supply of biodiesel and renewable diesel in 2016 for the final rule establishing the 2014–2016 standards, we estimated that the supply of biodiesel and renewable diesel could increase from the level supplied in 2015 in line with the largest observed annual supply increase from the historic record. While the availability of RIN generation data

for 2016 is limited, we believe the data available to date confirm that this high year-over-year increase is possible.[168] We believe this is the case in part due to the relatively small growth in the supply of biodiesel and renewable diesel in 2014 and 2015, during which no annual RFS standards were in place to promote growth in the supply of biodiesel and renewable diesel and during which time the biodiesel blenders tax credit was only reinstated retroactively. During these years (2014–2015), while growth in the supply of biodiesel and renewable diesel was limited, significant progress continued to be made in a number of areas (upgrades at biodiesel production facilities, increasing number of vehicles approved to use blends greater than B5, increasing biodiesel distribution infrastructure, etc.) to expand the potential supply of biodiesel and renewable diesel used as transportation fuel in the United States. We believe that despite this progress, the absence of RFS standards for most of this time period (along with other economic factors such as the lapses in the biodiesel blenders tax credit and the fluctuating prices of petroleum diesel and biodiesel and renewable diesel feedstocks) resulted in limited increases to the supply of biodiesel and renewable diesel in these years. We therefore believe that the significant increase in the projected supply of biodiesel and renewable diesel from 2015 to 2016 was significantly enabled by the relatively slow growth in supply in 2014 and 2015.

Commenters also noted a similarly large increase in the supply of biodiesel and renewable diesel from 2010 to 2011 to support claims that large annual increases in the supply of biodiesel and renewable diesel to the

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[168] "Comparison of 2016 availability of RINs and 2016 standards," memorandum from David Korotney to docket EPA–HQ–OAR–2016–0004.

United States could be achieved in successive years.[169] While this increase is yet another example of the rapid increase in the supply that can be achieved under certain market conditions, we once again note that in the years prior to 2010 the biodiesel and renewable diesel supply had been declining. It is not clear from the historical data whether such large increases are sustainable year-over-year. Increases of this magnitude require a number of factors, including feedstock supply, production capacity, distribution capacity, retail offerings, and biodiesel consumption, to be addressed. In previous years a significant excess of feedstocks, in combination with newly established state and federal incentives and a group of large, interested retail partners have enabled significant rapid growth in the supply of biodiesel and renewable diesel. We believe that these market conditions are unlikely to be repeated in future years, but that there still exist opportunities for growth in the supply of biodiesel and renewable diesel. After reviewing the available information and the comments received on the proposed rule, we believe that increases in the supply of biodiesel and renewable diesel greater than those we have proposed are possible, but we do not believe that these increases are without limit, as some commenters have suggested.

We recognize that the growth rates achieved in the past (such as the average annual growth rate or the largest annual supply increase) do not necessarily indicate the growth rate that can be achieved in the future. In the past, biodiesel was available in fewer markets, allowing new investments to be targeted to have a maximum impact on volume. However, as the market becomes more saturated and biodiesel becomes availa-

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[169] See NBB comments on the proposed rule (EPA–HQ–OAR–2016–0004–2904), page 5.

ble in an increasing number of markets, additional investments may tend to have less of an impact on volume, potentially limiting the increases in supply year over year. Additionally, much of the increase in the volume of biodiesel and renewable diesel supplied from 2012 to 2013 was renewable diesel, which is faced with far fewer distribution and consumption challenges than biodiesel for blends above B5. Such an increase in the available supply of renewable diesel in 2017 is unlikely as we are currently unaware of any renewable diesel facilities under construction, either in the United States or abroad, that are likely to supply significant volumes of fuel to the United States in 2017, and the capital costs and construction timelines associated with constructing new renewable diesel facilities are significant. It will likely require greater investment to achieve the same levels of growth in the supply of biodiesel and renewable diesel in 2017 as compared to the higher rates from previous years.

However, we must also consider the extent to which historic growth rates can be seen as representing what is possible with the RFS standards and other incentives in place. The year with the historic maximum rate of growth was 2013—a year in which both tax incentives and RFS incentives were in place to incentivize growth through the entire year. There were also fewer potential constraints to the growth of biodiesel and renewable diesel related to the distribution and use of biodiesel in 2013 than there are currently due to the significantly lower volume of these fuels supplied in 2012. We believe it is reasonable to assume the incentives provided by the standards in 2017 will be sufficient to enable supply increases despite these challenges discussed above, but do not believe it would be reasonable to assume that the RFS and other incentives could drive a rate of growth in 2017 that is equal to that seen

in 2013. Comments received from the National Biodiesel Board, as well as from the National Association of Truck Stop Owners (which represents parties with significant experience and investment in the distribution and sales of biodiesel) suggest that parties have already begun making the necessary investments to distribute and sell volumes of biodiesel that exceed the volumes projected in our proposed rule in anticipation of ongoing support for biodiesel from both the blenders tax credit and the RFS program. At the public hearing for the proposed 2017 RFS standards, Michael Whitney of Musket Corporation testified that his company, which is the supply and trading arm of Love's Travel Stops, anticipated increasing biodiesel supply by 100 million gallons in 2017.[170] He further estimated that as they accounted for approximately 20–25% of all biodiesel blended in the United States, that total supply could be increased by 500 million gallons in 2016.[171] While we believe these numbers are somewhat speculative, we also believe they provide support for an expectation of considerable growth in 2017. We also note, however, that while the National Association of Truck Stop Owners (NATSO) generally supported "ambitious" standards with respect to biodiesel and renewable diesel, they also supported EPA's consideration of "market realities" to prevent the RFS standards from being set at unreasonably high levels.[172] Failure to do so, they stated, could result in RFS standards that are significantly beyond the market's ability to supply renewable fuels, ultimately resulting in higher prices for diesel

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[170] See testimony of Michael Whitney, Musket Corporation, June 9, 2016 (Chicago Room).

[171] Ibid.

[172] See comments from NATSO (EPA–HQ–OAR–2016–0004–1830).

fuel, negatively impacting both NATSO members and the entire U.S. economy.[173]

In the NPRM we projected that the available supply of biodiesel and renewable diesel in 2017 would be approximately 2.7 billion gallons. We discussed the many different factors that could potentially constrain the production and use of biodiesel and renewable diesel in 2017, and placed particular emphasis on the potential limitations associated with the ability to distribute increasing volumes of biodiesel from production facilities to retail locations. In response to our proposed rule, several parties, including NBB and REG, provided significant new information to EPA related to the ability of the market to distribute biodiesel from production facilities to retail locations.[174] This information included data on the significant volume of biodiesel that is sold and transported to retail stations and/or other end users directly from biodiesel production facilities, bypassing the traditional fuel distribution points such as fuel terminals or bulk plants. These data were supported by statements from diesel retailers, such as the testimony of Michael Whitney cited above. While we continue to believe that the potential to produce, distribute, and consume biodiesel and renewable diesel in the United States is not without limit, we believe the information we received

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[173] Ibid. If RFS standards are significantly beyond the market's ability to supply renewable fuels, the price of biofuels and separated RINs could rise to extreme levels as obligated parties seek to obtain the RINs necessary to satisfy their obligations. This would be expected to cause an increase in gasoline and diesel prices as obligated parties sought to recover their RFS compliance costs through the prices of the petroleum fuels they sell.

[174] See comments from NBB (EPA–HQ–OAR–2016–0004–2904) and REG (EPA–HQ–OAR–2016–0004–3477).

in comments in our proposed rule provides a sufficient basis for concluding that a volume of 2.9 billion gallons of biodiesel and renewable diesel can be produced, distributed, and consumed in the United States in 2017. When taken together with our projection of 2.4 billion gallons of advanced biodiesel and renewable diesel, this assessment assumes 500 million gallons of conventional biodiesel and renewable diesel to be used towards satisfying the total renewable fuel standard.[175] However the market could choose to fill these volumes with advanced biodiesel or with other forms of renewable fuel.

The present constraints do not represent insurmountable barriers, but they will take time to overcome. The market has been making efforts to overcome these constraints in recent years, as demonstrated by discussion above and the fact that biodiesel and renewable diesel supply in the U.S. has been steadily increasing. We believe that opportunity for ongoing growth exists, but that the constraints listed above will continue to be a factor in the rate of growth in future years and that year-on-year growth may slow as the opportunities for large increases diminish. Taking all of the above into consideration, we believe that it would be reasonable to assume that growth in 2017 can exceed the 226 million gallon historic annual average increase from the 2011–2015 time period, but will be unlikely to reach the maximum 659 million gallon annual increase seen in 2013. Considering the multiplicity of factors potentially influencing supply, we do not believe

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[175] Lesser volumes of conventional biodiesel and renewable diesel may be used to satisfy the standards if additional volumes of advanced biodiesel and renewable diesel are supplied to the market, or if the volume of ethanol supplied to the market exceeds EPA's projections in the previous section.

that a projection can be made pursuant to any particular formula, but requires considerable exercise of judgment. We believe that it is reasonable to project a 400 million gallon increase in supply in 2017, which would result in a total supply of 2.9 billion gallons in 2017.

Throughout this section we have focused on determining if the market can reasonably attain the 2.9 billion gallons of biodiesel and renewable diesel needed, together with reasonably attainable volumes of ethanol and other renewable fuels, to satisfy the 19.28 billion gallon total renewable fuel volume derived through use of the cellulosic waiver authority alone. Based on the data available to EPA at this time, including data submitted in comments on the NPRM, we believe that the market is capable of producing, distributing, and using 2.9 billion gallons of biodiesel and renewable diesel in 2017. We note, however, that the 400 million gallon increase is significantly higher than the annual average increase in the supply of biodiesel and renewable diesel from 2011–2015, and when combined with the projected increase of approximately 600 million gallons from 2015 to 2016 would result in an increase in the supply of biodiesel and renewable diesel of over one billion gallons in just two years. While our analysis has not focused on determining the maximum reasonably achievable volume of biodiesel and renewable diesel in 2017, we believe that the ambitious growth in the supply of biodiesel projected from 2015 to 2017 indicate that the maximum reasonably achievable volume of these fuels in 2017 is likely near the 2.9 billion gallons assessed in this rule.

We recognize that the market may not necessarily respond to the final total renewable standard by supplying exactly 2.9 billion gallons of biodiesel and renew-

able diesel to the transportation fuels market in the United States in 2017, but that the market may instead supply a lower or higher volume of biodiesel and renewable diesel with corresponding changes in the supply of other types of renewable fuel. As a result, we believe there is less uncertainty with respect to the attainability of the total volume requirement of 19.28 billion gallons than there is concerning the projected 2.9 billion gallons of biodiesel and renewable diesel that we have used in determining the adequacy of supply of total renewable fuel for 2017.

3. Total Renewable Fuel Supply

In Section V.A we described how use of the cellulosic waiver authority to provide a volume reduction for total renewable fuel that equals that provided for advanced biofuels yields a volume of 19.28 billion gallons. Based on our assessment of supply of ethanol and biodiesel/renewable diesel, along with smaller amounts of non-ethanol cellulosic biofuel and other non-ethanol renewable fuels, we have determined that there will be adequate supply to meet a volume requirement of 19.28 billion gallons for total renewable fuel. As a result, there is no need for further reductions on the basis of an "inadequate domestic supply" determination using the general waiver authority.[176] Therefore, we are establishing the total renewable fuel volume requirement at 19.28 billion gallons.

Our use of the cellulosic waiver authority alone to set the advanced biofuel and total renewable fuel volume requirements results in an implied volume for

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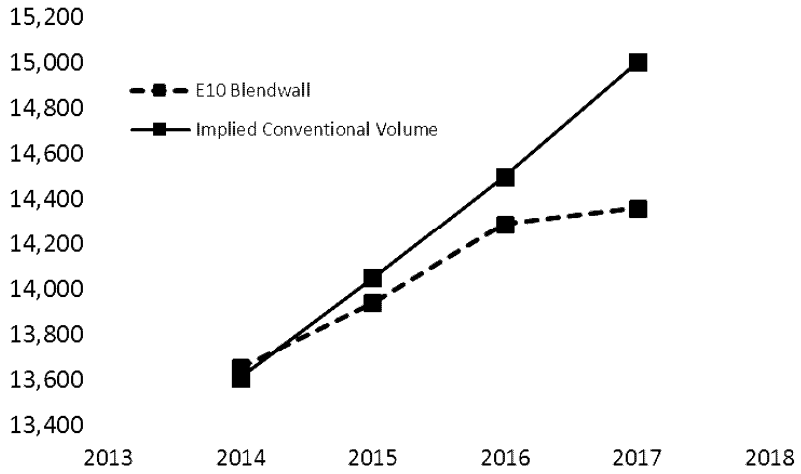
[176] As discussed in the response to comments document, we also do not believe that the record indicates either severe economic or environmental harm that would justify further reductions using the general waiver authority.

non-advanced (*i.e.* conventional) renewable fuel of 15.0 billion gallons. This is an increase over the proposed level of 14.8 billion gallons, and a significant increase in comparison to the 2016 implied volume of 14.5 billion gallons. We recognize that some stakeholders are primarily concerned about this implied conventional renewable fuel volume. For these stakeholders, it may be helpful to compare the implied volume for conventional renewable fuel to the E10 blendwall, despite the fact that a portion of the 15.0 billion gallon implied volume is likely to be met with conventional biodiesel and renewable diesel. As shown below, 15.0 billion gallons continues a year-by-year trend of exceeding the E10 blendwall (the volume of ethanol that could be consumed if all gasoline was E10 and there was no E0, E15, or E85) by ever increasing amounts.

Figure V.B.3-1
Comparison of E10 Blendwall to
Implied Conventional Volume



As discussed in Section V.B.2.viii above, we believe that there will be adequate supply of biodiesel and renewable diesel such that the total renewable fuel vol-

ume requirement of 19.28 billion gallons can be satisfied, based in part on our determination that 2.9 billion gallons of biodiesel and renewable diesel is reasonably attainable in 2017. While our analysis has not focused on determining the maximum reasonably achievable volume of renewable fuel in 2017, we believe that the ambitious growth in the supply of each of the various types of renewable fuel (discussed in further detail in the preceding Sections) indicates that the maximum reasonably achievable volume of these fuels in 2017 is likely near the 19.28 billion gallons assessed in this rule.

We note that the contributions from individual sources shown in Table V.B.3–1 were developed only for the purpose of determining the adequacy of supply of total renewable fuel; they do not represent EPA's projection of precisely how the market will respond. As we said in the 2014–2016 final rule, any supply estimate we make for particular fuel types may be uncertain, but there is greater certainty that the overall volume requirements can be met given the flexibility in the market that is inherent in the RFS program.

C. Market Responses to the Advanced Biofuel and Total Renewable Fuel Volume Requirements

To meet the final volume requirements, the market will need to respond by some combination of increasing domestic production and/or imports of those biofuels that have fewer marketplace constraints, by expanding the infrastructure for distributing and consuming renewable fuel, and/or by improving the relative pricing of renewable fuels and conventional transportation fuels at the retail level to ensure that they are attractive to consumers. However, because the transportation fuel market is dynamic and complex, and the

RFS program is only one of many factors that determine the relative types and amounts of renewable fuel that will be used, we cannot precisely predict the mix of different fuel types that will result. In this section we delineate a range of possible outcomes, and doing so provides a means of demonstrating that the volume requirements can reasonably be satisfied through multiple possible paths.

We evaluated a number of scenarios with varying levels of E0, E15, E85, imported sugarcane ethanol, advanced biodiesel and renewable diesel, and conventional biodiesel and renewable diesel. In doing so we sought to capture the range of possibilities for each individual source, based both on levels achieved in the past and how the market might respond to the applicable standards. Each of the rows in Table V.C–1 represents a scenario in which the total renewable fuel and advanced biofuel volume requirements would be satisfied.

TABLE V.C–1—VOLUME SCENARIOS ILLUSTRATING POSSIBLE COMPLIANCE WITH THE 2017 VOLUME REQUIREMENTS

[million gallons][ab]

E85	E15	E0	Total ethanol[c]	Sugarcane ethanol	Total biodiesel and renewable diesel[d]	Minimum volume of advanced biodiesel and renewable diesel[d]
200	600	200	14,504	0	2,856	2,528
200	600	500	14,474	0	2,876	2,528
200	600	500	14,474	200	2,876	2,399
200	600	500	14,474	500	2,876	2,206
200	600	500	14,474	800	2,876	2,012
200	1,200	200	14,535	500	2,836	2,206
330	600	500	14,559	800	2,830	2,012
330	1,200	200	14,621	0	2,780	2,528
330	1,200	200	14,621	200	2,780	2,399
330	1,200	200	14,621	500	2,780	2,206
330	1,200	200	14,621	800	2,780	2,012
330	1,200	500	14,590	200	2,800	2,399

The scenarios in the tables above are not the only ways that the market could choose to meet the total renewable fuel and advanced biofuel volume requirements that we are establishing in this action. Indeed,

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[a] Assumes for the purposes of these scenarios that supply of other advanced biofuel other than ethanol, BBD and renewable diesel (*e.g.,* heating oil, naphtha, etc.) is 50 mill gal, and that the cellulosic biofuel final volume requirement is 311 mill gal, of which 12 mill gal is ethanol and the remainder is primarily biogas.

[b] Biodiesel + renewable diesel is given in physical gallons, and can be converted into ethanol-equivalent gallons by multiplying by 1.55 (see discussion of this conversion factor in Section IV.B.2). Other categories are given as ethanol-equivalent volumes.

[c] For the range of total ethanol shown in this table, the poolwide average ethanol content would range from 10.08% to 10.17%.

[d] Includes supply from both domestic producers as well as imports.

other combinations are possible, with volumes higher than the highest levels we have shown above or, in some cases, lower than the lowest levels we have shown. The scenarios above cannot be treated as EPA's views on the only, or even most likely, ways that the market may respond to the 2017 volume requirements. Instead, the scenarios are merely illustrative of the various ways that it could play out. Our purpose in generating the list of scenarios above is only to illustrate a range of possibilities which demonstrate that the standards we are establishing in this action can reasonably be met.

We provided a similar table of volume scenarios in the NPRM, and stakeholders were strongly divided on whether those scenarios were achievable and whether they captured the most likely outcomes. Refiners generally said that most if not all of the scenarios were not achievable in 2017, expressing concern that the chosen volumes of E0 were lower than actual market demand and that the chosen volumes of other ethanol blends and renewable fuel sources were considerably higher than historical levels. Proponents of renewable fuels generally said that the provided scenarios were not demonstrative of the much higher renewable fuel volumes that were possible. Comments on reasonably attainable levels of specific ethanol blends and non-ethanol renewable fuel types are addressed in Section V.B above and in Sections 2.3 through 2.5 of the RTC document.

Several proponents of the ethanol industry said that the proposed standards would provide no incentive for greater volumes of E15 and/or E85 in 2017 compared to 2016, and no incentive for increased investment in the infrastructure that supports these higher ethanol blends. We disagree. The proposed volume requirement

for total renewable fuel, and the implied volume for non-advanced renewable fuel, were both higher than the corresponding final volume requirements for 2016. While none of the applicable RFS program standards are specific to ethanol, the higher proposed volume requirements would have created greater incentives for growth in E15 and/or E85 in 2017 than existed in 2016. Moreover, we have increased the final volume requirement for total renewable fuel and the implied volume for non-advanced renewable fuel in this final rule, in comparison to the NPRM, providing additional incentives for expansion of E15 and/or E85.

One stakeholder representing conventional ethanol interests said that the volume scenarios in the NPRM demonstrated that 15 billion gallons of non-advanced renewable fuel were possible in 2017. To do this, the stakeholder pointed to the highest volumes in each category to construct a new scenario higher than the proposed volume requirements. While we are in fact finalizing standards for 2017 that include an implied volume of 15 billion gallons of non-advanced renewable fuel, we continue to believe, as we stated in the NPRM, that it would be inappropriate to construct a new scenario (as this commenter attempted) based on the highest volumes in each category that are shown in the tables above in order to argue for higher volume requirements. Doing so would result in summing of values that we have determined are higher than the reasonably attainable volumes of the different fuel categories, resulting in a total volume that we believe would be extremely unlikely to be reasonably attainable or appropriate. We have more confidence in the ability of the market to attain the volume requirements for advanced biofuel and total renewable fuel than we have in the ability of the market to achieve a specific level of, say, biodiesel, or E85. The probability

that the upper limits of all sources shown in the tables above could be reasonably attained simultaneously is very small. For instance, if all volume levels in Table V.C–1 were equally likely, then there would be a less than 1% likelihood that the maximum levels could be attained simultaneously.[177]

We recognize that in some scenarios described in the NPRM and above, the volume of a particular category of renewable fuel exceeds the historical maximum or previously demonstrated production level. Stakeholders who believed that the proposed volume requirements were too high pointed to this fact as evidence that many, if not all, volume levels in the scenarios were not achievable. However, as stated in the NPRM, the fact that the scenarios included volumes higher than historical levels cannot be treated as a reason for concluding that such levels are not achievable. The RFS program is intended to result in supply in any given year that is higher than in all previous years, and it is our determination that for 2017 this is reasonably attainable.

With regard to E85, under highly favorable conditions related to growth in the number of E85 retail stations, retail pricing, and consumer response to that pricing, it is possible that E85 volumes as high as 330 million gallons could be reached. For instance, growth in the number of retail stations offering E85 may increase more rapidly than we have estimated under USDA's Biofuels Infrastructure Partnership (BIP) grant program and the ethanol industry's Prime the Pump program. If so, the total number of retail stations offer-

[177] For illustrative purposes only. We have not determined the relative likelihood of the different volume levels shown in Table V.C–1.

ing E85 could perhaps increase from about 3,100 today to 4,800 in 2017 (average for the year), rather than the 4,300 we assumed above in Section V.B.1.iii. Also, it is possible that increases in the price of D6 RINs since the release of the 2014–2016 final rule can help to increase the E85 price discount relative to E10 if producers and marketers of E85 pass the value of the RIN to the prices offered to customers at retail, providing greater incentive to FFV owners to refuel with E85 instead of E15. Under such circumstances, an E85 price discount as high as 30% is possible. Indeed, E85 price discounts this high have been reached in the past in some locales.[178] Efforts to increase the visibility of E85, including expanded marketing and education, can also help to increase E85 sales. Sales volumes of E85 higher than 330 million gallons are very unlikely, but are possible if pump installations increase significantly and the market can overcome constraints associated with E85 pricing at retail and consumer responses to those prices.

Similarly, we believe that under favorable conditions, it is possible that E15 volumes as high as 1,200 million gallons could be reached in 2017. Again, the BIP program and Prime the Pump program could result in a higher growth rate for retail stations offering E15 than we have estimated, potentially reaching as high as 2,000 in 2017 (average for the year). Although for the purposes of estimating reasonably attainable E15 in 2017 we have estimated that sales of E15 would be 15% of all gasoline sales at stations selling both E10 and E15, it is possible that sales of E15 could be as high as 50% under favorable pricing conditions as

[178] For instance, data from the Fuels Institute indicates that 3% of E85 price discounts were above 30% at surveyed retail stations in 2015.

described in Section V.B.1.ii. Also, additional terminals could produce E15 in 2017 beyond the four that we included in our estimate of reasonably attainable volumes of E15 in 2017.[179]

As the table above illustrates, the volume requirements could result in the consumption of 2.88 billion gallons of biodiesel and renewable diesel in 2017. This level is less than our estimate of the production capacity for all registered domestic biodiesel and renewable diesel production facilities, and approximately the same as the 2.9 billion gallons that we used in the context of determining whether there is adequate supply to meet the total renewable fuel volume requirement of 19.28 billion gallons in 2017. Given the necessarily imprecise nature of our estimate of supply of biodiesel and renewable diesel in the context of determining whether there will be adequate supply to meet the total renewable fuel volume requirement of 19.28 billion gallons in 2017, volumes as high as 2.88 billion gallons and potentially higher are possible.

Finally, out of the maximum of about 2.9 billion gallons of biodiesel and renewable diesel shown in Table V.C–1, more than 2.5 billion gallons could be advanced biodiesel. While this is slightly higher than the 2.4 billion gallons that we used in determining the advanced biofuel volume requirement, it could be supplied from current biodiesel domestic production capacity which is about 3 billion gallons, though this would possibly involve additional feedstock switching as discussed in Section IV.

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[179] HWRT Oil Company intends to eventually offer E15 from 17 additional terminals in addition to the four announced on July 19, 2016. "HWRT & RFA Announce First-Ever Offering of Preblended E15," docket EPA–HQ–OAR–2016–0004.

D. Impacts of 2017 Standards on Costs

In this section we provide illustrative cost estimates for the 2017 standards. By "illustrative costs," EPA means the cost estimates provided are not meant to be precise measures, nor do they attempt to capture the full impacts of this final rule. These estimates are provided solely for the purpose of showing how the cost to produce a gallon of a "representative" renewable fuel compares to the cost of petroleum fuel. There are a significant number of caveats that must be considered when interpreting these cost estimates. First, there are a number of different feedstocks that could be used to produce ethanol and biodiesel, and there is a significant amount of heterogeneity in the costs associated with these different feedstocks and fuels. Some fuels may be cost competitive with the petroleum fuel they replace; however, we do not have cost data on every type of feedstock and every type of fuel. Therefore, we do not attempt to capture this range of potential costs in our illustrative estimates.

Second, the costs and benefits of the RFS program as a whole are best assessed when the program is fully mature in 2022 and beyond.[180] We continue to believe that this is the case, as the annual standard-setting process encourages consideration of the program on a piecemeal (*i.e.,* year-to-year) basis, which may not reflect the long-term economic effects of the program. Thus, EPA did not quantitatively assess other direct and indirect costs or benefits of increased renewable fuel volumes such as infrastructure costs, investment, GHG emissions and air quality impacts, or energy security benefits, which all are to some degree affected by this final rule. While some of these impacts were

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[180] 77 FR 59477.

analyzed in the 2010 final rulemaking which established the current RFS program, we have not fully analyzed these impacts for the 2017 volume requirements. We have framed the analyses we have performed for this final rule as "illustrative" so as not to give the impression of comprehensive estimates.

Third, at least two different scenarios could be considered the "baseline" for the assessment of the costs of this rule. One scenario would be the statutory volumes (*e.g.,* the volumes in the Clean Air Act 211(o)(2) for 2016) in which case this final rule would be reducing volumes, reducing costs as well as decreasing expected GHG benefits. For the purposes of showing illustrative overall costs of this rulemaking, we use the preceding year's standard as the baseline (*e.g.,* the baseline for the 2017 advanced standard is the 2016 advanced standard), an approach consistent with past practices in previous annual RFS rules.

EPA is providing cost estimates for three illustrative scenarios:

1. If the entire change in the advanced standards is met with soybean oil BBD
2. If the entire change in the advanced standards is met with sugarcane ethanol from Brazil
3. If the entire change in the total renewable fuel volume standards that can be satisfied with conventional (*i.e.,* non-advanced) renewable fuel is met with corn ethanol.

While a variety of biofuels could help fulfill the advanced standard beyond soybean oil BBD and sugarcane ethanol from Brazil, these two biofuels have been most widely used in the past. The same is true for corn

ethanol vis-a-vis the non-advanced component of the total renewable fuel standard. We believe these scenarios provide illustrative costs of meeting the applicable 2017 standards.

For this analysis, we estimate the per gallon costs of producing biodiesel, sugarcane ethanol, and corn ethanol relative to the petroleum fuel they replace at the wholesale level, then multiply these per gallon costs by the difference in the volumes between the relevant 2017 standard and the previous 2016 standard for the advanced (for biodiesel and sugarcane ethanol) and non-advanced component of the total renewable fuel (for corn ethanol) categories. More background information on this section, including details of the data sources used and assumptions made for each of the scenarios, can be found in a Memorandum submitted to the docket.[181]

Because we are focusing on the wholesale level in each of the three scenarios, these comparisons do not consider taxes, retail margins, and any other costs or transfers that occur at or after the point of blending (*i.e.,* transfers are payments within society and are not additional costs). Further, as mentioned above we do not attempt to estimate potential costs related to infrastructure expansion with increased renewable fuel volumes (*e.g.,* the costs of providing pumps and storage tanks associated with higher level ethanol blends). In addition, because more ethanol gallons must be consumed to go the same distance as gasoline and more biomass-based diesel must be consumed to go the same distance as petroleum diesel due to each of the biofuels'

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[181] "Illustrative Costs Impact of the Final Annual RFS2 Standards, 2017", Memorandum from Michael Shelby and Aaron Sobel to EPA Docket EPA–HQ–OAR–2016–0004.

lesser energy content, we consider the costs of ethanol and biomass-based diesel on an energy equivalent basis to their petroleum replacements (*i.e.,* per energy equivalent gallon).

For our first illustrative cost scenario, we estimate the costs of soybean-based biodiesel to meet the entire change in the advanced biofuel standard for 2017.[182] Table V.D–1 below presents the annual change in volumes being established by this rule, a range of illustrative cost differences between biomass-based diesel and petroleum-based diesel by individual gallon on a diesel gallon equivalent (DGE) basis, and multiplies those per gallon cost estimates by the volume of fuel displaced by the advanced standard on an energy equivalent basis to obtain an overall cost estimate of meeting the standard.

[182] Soybean biodiesel could meet the pre-established 2017 biomass-based diesel volume, which itself is a nested volume within the 2017 advanced biofuel RFS volume. Illustrative costs represent meeting all of the costs of the annual increase of the 2017 advanced standard using entirely soybean-based biodiesel as one scenario.

TABLE V.D–1—ILLUSTRATIVE COSTS OF SOYBEAN BIODIESEL TO MEET INCREASE IN ADVANCED BIOFUEL STANDARDS IN 2017

	2016	2017
Advanced Volume Required (Million Gallons)	3,610	4,280
Advanced Volume Required (Million Gallons as Biodiesel)	2,407	[183]2,853
Annual Change in Volume Required (Million Gallons as Biodiesel)		447
(DGE)[184]		*(408)*
Cost Difference Between Soybean Biodiesel and Petroleum Diesel Per Gallon ($/DGE)		$1.98-$2.95
Annual Increase in Overall Costs (Million $)		[185]$807-$1.203

For our second illustrative cost scenario, we estimate the costs of Brazilian sugarcane ethanol to meet the entire change in the advanced biofuel standard for 2017. Table V.D–2 below presents the annual change in volumes established by this final rule, a range of illustrative cost differences between Brazilian sugarcane ethanol and wholesale gasoline on a per gasoline gallon equivalent (GGE) basis, and multiplies those per gallon cost estimates by the volume of fuel displaced by the advanced standard on an energy equivalent basis to obtain an overall cost estimate of meeting the standard.

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[183] EPA used a value of 1.5 when calculating the RIN equivalencies of soybean-based biodiesel for the purpose of this illustrative costs example. See section IV.B–2 for a more detailed explanation of the biodiesel and renewable diesel equivalence value used for the purpose of deriving the renewable fuel standard under the 2017 RFS rule.

[184] Due to the difference in energy content between biodiesel and diesel, one gallon of biodiesel is energy-equivalent to approximately 91% of a gallon of diesel; 447 million gallons of biodiesel is energy-equivalent to approximately 408 million gallons of diesel.

[185] Overall costs may not match per gallon costs times volumes due to rounding.

TABLE V.D–2—ILLUSTRATIVE COSTS OF BRAZILIAN SUGARCANE ETHANOL TO MEET INCREASE IN ADVANCED BIOFUEL STANDARDS IN 2017

	2016	2017
Advanced Volume Required (Million Gallons)	3,610	4,280
Annual Change in Volume Required (Million Gallons)		670
(GGE)[186]		*(447)*
Cost Difference Between Sugarcane Ethanol and Gasoline Per Gallon ($/GGE)		$1.00-$2.16
Annual Increase in Overall Costs (Million $)		[187]$446-$966

For our third illustrative cost scenario, we assess the difference in cost associated with a change in the implied volumes available for conventional (*i.e.,* non-advanced) biofuels for 2017. We provide estimates of what the potential costs might be if corn ethanol is used to meet the entire change in implied conventional renewable fuel volumes. Table V.D–3 below presents the annual change in volumes established by this final rule, a range of illustrative cost differences between corn ethanol and the wholesale gasoline on a per gasoline gallon equivalent (GGE) basis, and multiplies those per gallon cost estimates by the volume of petroleum displaced on an energy equivalent basis by the change in implied conventional fuel volumes for an estimated overall cost in 2017.

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[186] Due to the difference in energy content between ethanol and gasoline, one gallon of ethanol is energy-equivalent to approximately 67% of a gallon of gasoline; 670 million gallons of ethanol is energy-equivalent to approximately 447 million gallons of gasoline.

[187] Overall costs may not match per gallon costs times volumes due to rounding.

TABLE V.D–3—ILLUSTRATIVE COSTS OF CORN ETHANOL TO MEET INCREASE IN THE CONVENTIONAL (*i.e.*, NON-ADVANCED) PORTION OF THE TOTAL RENEWABLE FUEL STANDARDS IN 2017

	2016	2017
Implied Conventional Volume (Million Gallons)	14,500	15,000
Annual Change in Implied Conventional Volume (Million Gallons)		500
(GGE)[188]		*(333)*
Cost Difference Between Corn Ethanol and Gasoline Per Gallon ($/GGE)		$0.72-$1.04
Annual Increase in Overall Costs (Million $)		[189]$240-$347

These illustrative cost estimates are not meant to be precise measures, nor do they attempt to capture the full impacts of the rule. These estimates are provided solely for the purpose of illustrating how the cost to produce renewable fuels could compare to the costs of producing petroleum fuels. There are several important caveats that must be considered when interpreting these costs estimates. First, there is a significant amount of heterogeneity in the costs associated with different feedstocks and fuels that could be used to produce renewable fuels; however, EPA did not attempt to capture this range of potential costs in these illustrative estimates. Second, EPA did not quantify other impacts such as infrastructure costs, job impacts, or investment impacts. If the illustrative costs from the Tables above, representing the range for combined advanced and non-advanced fuel volumes, were summed together they would range from $686–$1,550 million in 2017. It is important to note that

[188] 500 million gallons of ethanol is energy-equivalent to approximately 333 million gallons of gasoline.

[189] Overall costs may not match per gallon costs times volumes due to rounding.

these costs do not represent net benefits of the program.

For the purpose of this annual rulemaking, we have not quantified benefits for the 2017 standards. We do not have a quantified estimate of the GHG impacts for a single year (*e.g.,* 2017), and there are a number of benefits that are difficult to quantify, such as rural economic development, employment impacts, and national security benefits from more diversified fuel sources. When the RFS program is fully phased in, the program will result in considerable volumes of renewable fuels that will reduce GHG emissions in comparison to the fossil fuels which they replace. EPA estimated GHG, energy security, and air quality impacts and benefits in the 2010 RFS2 final rule assuming full implementation of the statutory volumes in 2022.[190]

VI. Biomass-Based Diesel Volume for 2018

In this section we discuss the final biomass-based diesel (BBD) applicable volume for 2018. We are establishing this volume in advance of those for other renewable fuel categories in light of the statutory requirement in CAA section 211(o)(2)(B)(ii) to establish the applicable volume of BBD for years after 2012 no later than 14 months before the applicable volume will apply. We are not at this time establishing the BBD percentage standards that would apply to obligated parties in 2018 but intend to do so in the Fall of 2017, after receiving EIA's estimate of gasoline and diesel consumption for 2018. Although the BBD applicable volume sets a floor for required BBD use, because the BBD volume requirement is nested within both the advanced biofuel and the total renewable fuel volume requirements, any "excess" BBD produced beyond the man-

[190] 75 FR 14670.

dated 2018 BBD volume can be used to satisfy both of these other applicable volume requirements. Therefore, these other standards can also influence BBD production and use.

A. Statutory Requirements

The statute establishes applicable volume targets for years through 2022 for cellulosic biofuel, advanced biofuel, and total renewable fuel. For BBD, applicable volume targets are specified in the statute only through 2012. For years after those for which volumes are specified in the statute, EPA is required under CAA section 211(o)(2)(B)(ii) to determine the applicable volume of BBD, in coordination with the Secretary of Energy and the Secretary of Agriculture, based on a review of the implementation of the program during calendar years for which the statute specifies the volumes and an analysis of the following factors:

1. The impact of the production and use of renewable fuels on the environment, including on air quality, climate change, conversion of wetlands, ecosystems, wildlife habitat, water quality, and water supply;
2. The impact of renewable fuels on the energy security of the United States;
3. The expected annual rate of future commercial production of renewable fuels, including advanced biofuels in each category (cellulosic biofuel and BBD);
4. The impact of renewable fuels on the infrastructure of the United States, including deliverability of materials, goods, and products other than renewable fuel, and the suf-

ficiency of infrastructure to deliver and use renewable fuel;

5. The impact of the use of renewable fuels on the cost to consumers of transportation fuel and on the cost to transport goods; and

6. The impact of the use of renewable fuels on other factors, including job creation, the price and supply of agricultural commodities, rural economic development, and food prices.

The statute also specifies that the volume requirement for BBD cannot be less than the applicable volume for calendar year 2012, which is 1.0 billion gallons. The statute does not, however, establish any other numeric criteria, or provide any guidance on how the EPA should weigh the importance of the often competing factors, and the overarching goals of the statute when the EPA sets the applicable volumes of BBD in years after those for which the statute specifies such volumes. In the period 2013–2022, the statute specifies increasing applicable volumes of cellulosic biofuel, advanced biofuel, and total renewable fuel, but provides no guidance, beyond the 1.0 billion gallon minimum, on the level at which BBD volumes should be set.

B. Determination of Applicable Volume of Biomass-Based Diesel

1. BBD Production and Compliance Through 2015

One of the primary considerations in determining the biomass-based diesel volume for 2018 is a review of the implementation of the program to date, as it affects biomass-based diesel. This review is required

by the CAA, and also provides insight into the capabilities of the industry to produce, import, export, and distribute BBD. It also helps us to understand what factors, beyond the BBD standard, may incentivize the production and import of BBD. The number of BBD RINs generated, along with the number of RINs retired due to export or for reasons other than compliance with the annual BBD standards from 2011–2015 are shown below.

TABLE VI.B.1–1—BIOMASS-BASED (D4) RIN GENERATION AND STANDARDS IN 2013–2017

[Million gallons][191]

	BBD RINs generated	Exported BBD (RINs)	BBD RINs retired, non-compliance reasons	Available BBD RINs[a]	BBD standard (gallons)	BBD standard (RINs)
2011	1,692	110	98	1,483	800	1,200
2012	1,737	183	90	1,465	1,000	1,500
2013	2,739	298	101	2,341	1,280	1,920
2014	2,710	126	92	2,492	1,630	[b]2,490
2015	2,796	133	32	2,631	1,730	[b]2,655
2016	N/A	N/A	N/A	N/A	1,900	2,850
2017	N/A	N/A	N/A	N/A	2,000	3,000

[191] Net BBD RINs Generated and BBD RINs Retired for Non-Compliance Reasons information from EMTS. Biodiesel Export information from EIA. *http://www.eia.gov/dnav/pet/pet_move_expc_a_EPOORDB_EEX_mbbl_a.htm*.

[a] Available BBD RINs may not be exactly equal to BBD RINs Generated minus Exported RINs and BBD RINs Retired, Non-Compliance Reasons due to rounding.

[b] Each gallon of biodiesel qualifies for 1.5 RINs due to its higher energy content per gallon than ethanol. Renewable diesel qualifies for between 1.5 and 1.7 RINs per gallon. In 2014 and 2015 the number of RINs in the BBD Standard column is not exactly equal to 1.5 times the BBD volume standard as these standards were established based on actual RIN generation data for 2014 and a combination of actual data and a projection of RIN generation for the last three months of the year for 2015. Some of

In reviewing historical BBD RIN generation and use, we see that the number of RINs available for compliance purposes exceeded the volume required to meet the BBD standard in 2011 and 2013. Additional production and use of biodiesel was likely driven by a number of factors, including demand to satisfy the advanced biofuel and total renewable fuels standards, the biodiesel tax credit, and favorable blending economics. In 2012 the available BBD RINs were slightly less than the BBD standard. There are many reasons this may have been the case, including the temporary lapse of the biodiesel tax credit at the end of 2011.[192] The number of RINs available in 2014 and 2015 was approximately equal to the number required for compliance in those years. This is because the standards for these years were finalized at the end of November 2015 when RIN generation data were available for all of 2014 and much of 2015, and we exercised our authority to establish the required BBD volumes for these time periods to be approximately equal to the number of BBD RINs that were available (for past time periods) or were expected to be available (for the months of 2015 for which EPA did not yet have reliable data) in the absence of the influence of the RFS standards. While we do not yet have final compliance data for 2016, BBD RIN generation is currently on track to exceed the volume required by the BBD standard by a signifi-

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the volume used to meet the biomass-based diesel standard was renewable diesel, which generally has an equivalence value of 1.7.

[192] The biodiesel tax credit was reauthorized in January 2013. It applied retroactively for 2012 and for the remainder of 2013. It was once again extended in December 2014 and applied retroactively to all of 2014 as well as to the remaining weeks of 2014. In December 2015 the biodiesel tax credit was once authorized and applied retro-actively for all of 2015 as well as through the end of 2016.

cant margin.[193] This strongly suggests that there is demand for these RINs to satisfy the advanced biofuel and/or total renewable fuel requirements.

2. Interaction Between BBD and Advanced Biofuel Standards

The BBD standard is nested within the advanced biofuel and total renewable fuel standards. This means that when an obligated party retires a BBD RIN (D4) to satisfy their BBD obligation, this RIN also counts towards meeting their advanced biofuel and total renewable fuel obligations. It also means that obligated parties may use BBD RINs in excess of their BBD obligations to satisfy their advanced biofuel and total renewable fuel obligations. Higher advanced biofuel and total renewable fuel standards, therefore, create demand for BBD, especially if there is an insufficient supply of other advanced or conventional renewable fuels to satisfy the standards, or if BBD RINs can be acquired at or below the price of other advanced or conventional biofuel RINs.[194]

In reviewing the implementation of the RFS program to date, it is apparent that the advanced biofuel and/or total renewable fuel volume requirements were in fact helping grow the market for volumes of biodiesel above the BBD standard. In 2013 the number of advanced RINs generated from fuels other than BBD and cellulosic biofuel was not large enough to satisfy the implied standard for "other advanced"

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[193] "Comparison of 2016 availability of RINs and 2016 standards," memorandum from David Korotney to docket EPA–HQ–OAR–2016–0004.

[194] The biodiesel blenders tax credit effectively reduced the cost of BBD, allowing it to be priced lower than many other advanced biofuels.

biofuel (advanced biofuel needed to satisfy the advanced biofuel standard after the BBD and cellulosic biofuel standards are met), and additional volumes of BBD filled the gap (see Table VI.B.2–1 below). In fact, the amount by which the available BBD RINs exceeded the 1.28 billion gallon BBD volume requirement (421 million RINs) was larger than the amount of such excess BBD needed, together with other types of advanced biofuels, to satisfy the advanced biofuel standard (278 million RINs; the number of advanced biofuel RINs required after subtracting the number of RINs generated to meet the BBD standard and the number of RINs generated for non-BBD advanced biofuels), suggesting that the additional increment was incentivized by the total renewable fuel standard. Preliminary data for 2016 similarly reveal the ability for the advanced and total renewable fuel standards to incentivize increased BBD production. The current RIN generation data suggest that BBD production is on track to exceed the BBD standard for 2016 by a significant margin, and that these excess BBD RINs will be needed to enable compliance with the advanced biofuel and total renewable fuel standards given the limited production of other advanced biofuels.[195] As discussed above, the 2014 and 2015 BBD standards were intended to reflect the full number of available BBD RINs in these years and were set in late 2015, at which point the number of available RINs in these years was largely known. We can therefore draw no conclusions about the ability for the advanced and total renewable fuel standards to incentivize BBD production from these years. While the available BBD RINs in 2012 were slightly less

[195] "Comparison of 2016 availability of RINs and 2016 standards," memorandum from David Korotney to docket EPA–HQ–OAR–2016–0004.

than the BBD standard despite the opportunity to contribute towards meeting the advanced and total renewable fuel standards, there are several factors beyond the RFS standards (2012 drought, expiration of the biodiesel tax credit, opportunities for increased ethanol blending as E10) that likely impacted BBD production in 2012. We continue to believe that the advanced biofuel and total renewable fuel standards can provide a strong incentive for increased BBD volume in the United States in excess of that required to satisfy the BBD standard (for further discussion on this issue see 80 FR 77492)

TABLE VI.B.2–1—BIOMASS-BASED DIESEL AND ADVANCED BIOFUEL RIN GENERATION AND STANDARDS

	Available BBD (RINs)	BBD standard (RINs)	Available D5 RINs (advanced biofuels)[a]	Opportunity "Other for Advanced" biofuels[b]
2011	1,483	1,200	225	150
2012	1,465	1,500	597	500
2013	2,341	1,920	552	830
2014	2,492	2,490	143	147
2015	2,631	2,655	147	102

The prices paid for advanced biofuel and BBD RINs beginning in early 2013 through mid-2016 also support the conclusion that advanced biofuel and/or total renewable fuel standards provide a sufficient incentive for additional biodiesel volume beyond what is required by the BBD standard. Because the BBD stand-

[a] Does not include BBD or cellulosic biofuel RINs, which may also be used towards an obligated party's advanced biofuel obligation.

[b] Advanced biofuel that does not qualify as BBD or cellulosic biofuel; calculated by subtracting the number of required BBD RINs (BBD required volume $\times 1.5$) and the number of required cellulosic biofuel RINs from the advanced biofuel volume requirement.

ard is nested within the advanced biofuel and total renewable fuel standards, and therefore can help to satisfy three RVOs, we would expect the price of BBD RINs to exceed that of advanced and conventional renewable RINs.[196] If, however, BBD RINs are being used by obligated parties to satisfy their advanced biofuel and/or total renewable fuel obligations, above and beyond the BBD standard, we would expect the prices of conventional renewable fuel, advanced biofuel, and BBD RINs to converge to the price of the BBD RIN.[197] When examining RIN prices data from 2013 through mid-2016, shown in Figure VI.B.2–1 below, we see that throughout this entire time period the advanced RIN price and biomass-based diesel RIN prices were approximately equal. Similarly, throughout most of this time period the conventional renewable fuel and biomass-based diesel RIN prices were approximately equal. This suggests that the advanced biofuel standard and/or total renewable fuel standard was capable of incentivizing increased BBD volumes beyond the BBD standard in these years.[198] While final standards were

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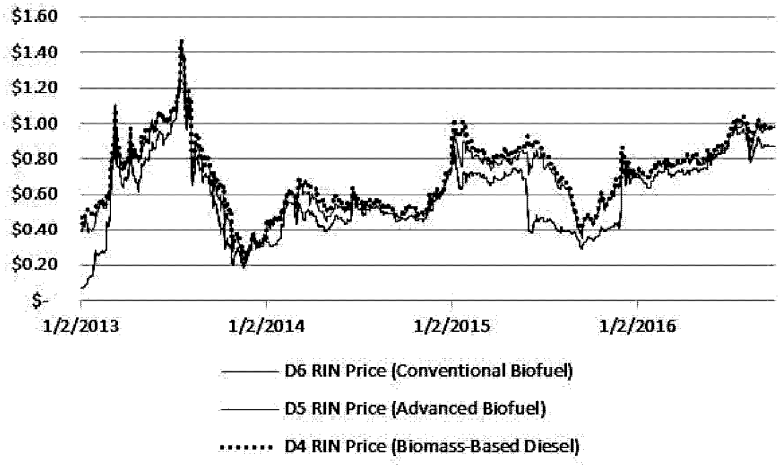
[196] This is because when an obligated party retires a BBD RIN to help satisfy their BBD obligation, the nested nature of the BBD standard means that this RIN also counts towards satisfying their advanced and total renewable fuel obligations. Advanced RINs count towards both the advanced and total renewable fuel obligations, while conventional RINs (D6) count towards only the total renewable fuel obligation.

[197] We would still expect D4 RINs to be valued at a slight premium to D5 and D6 RINs in this case (and D5 RINs at a slight premium to D6 RINs) to reflect the greater flexibility of the D4 RINs to be used towards the BBD, advanced biofuel, and total renewable fuel standard. This pricing has been observed over the past several years.

[198] Although we did not issue a rule establishing the final 2013 standards until August of 2013, we believe that the market anticipated the final standards, based on EPA's July 2011 proposal

not in place throughout 2014 and most of 2015, EPA had issued proposed rules for both of these years. In each year, the market response was to supply volumes of BBD that exceeded the proposed BBD standard in order to satisfy the advanced biofuel standard. Additionally, the RIN prices in these years strongly suggests that obligated parties and other market participants anticipated the need for BBD RINs to meet their advanced biofuel obligations, and responded by purchasing advanced biofuel and BBD RINs at approximately equal prices.

Figure VI.B.2-1
Current Year RIN Prices (2013-2016)[a]



In establishing the BBD and cellulosic standards as nested within the advanced biofuel standard, Congress clearly intended to support development of BBD

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and the volume targets for advanced and total renewable fuel established in the statute (76 FR 38844, 38843).

[a] For a list of the eligible pathways for each D-code see Table 1 to §80.1426 RIN Price Data from OPIS (2013-2015) and Argus (2016)

and cellulosic biofuels, while also providing an incentive for the growth of other non-specified types of advanced biofuels. That is, the advanced biofuel standard provides an opportunity for other advanced biofuels (advanced biofuels that do not qualify as cellulosic biofuel or BBD) to be used to satisfy the advanced biofuel standard after the cellulosic biofuel and BBD standards have been met. Indeed, since Congress specifically directed growth in BBD only through 2012, leaving development of volume targets for BBD to EPA for later years while also specifying substantial growth in the cellulosic biofuel and advanced biofuel categories, we believe that Congress clearly intended for EPA to evaluate in setting BBD volume requirements after 2012 the appropriate rate of participation of BBD within the advanced biofuel standard.

When viewed in a long-term perspective, BBD can be seen as competing for research and development dollars with other types of advanced biofuels for participation as advanced biofuels in the RFS program. We believe that preserving space within the advanced biofuel standard for advanced biofuels that do not qualify as BBD or cellulosic biofuel provides the appropriate incentives for the continued development of these types of fuels. In addition to the long-term impact of our action in establishing the BBD volume requirements, there is also the potential for short-term impacts during the compliance years in question. By establishing BBD volume requirements at levels lower than the advanced biofuel volume requirements (and lower than the expected production of BBD to satisfy the advanced biofuel requirement), we are creating the potential for some competition between BBD and other advanced biofuels to satisfy the advanced biofuel volume standard. We continue to believe that preserving space under the advanced biofuel standard for non-

BBD advanced biofuels, as well as BBD volumes in excess of the BBD standard, will help to encourage the development and production of a variety of advanced biofuels over the long term without reducing the incentive for additional volumes of BBD beyond the BBD standard in 2018. A variety of different types of advanced biofuels, rather than a single type such as BBD, would positively impact energy security (*e.g.,* by increasing the diversity of feedstock sources used to make biofuels, thereby reducing the impacts associated with a shortfall in a particular type of feedstock) and increase the likelihood of the development of lower cost advanced biofuels that meet the same GHG reduction threshold as BBD.[199]

While a single-minded focus on the ability of the advanced and total renewable fuel standards to incentivize increasing production of the lowest cost qualifying biofuels, regardless of fuel type, would suggest that a flat or even decreasing BBD volume requirement may be the optimal solution, this is not the only consideration. Despite many of these same issues being present in previous years, we have consistently increased the BBD standard each year. Our decisions to establish increasing BBD volumes each year have been made in light of the fact that while cellulosic biofuel production has fallen far short of the statutory volumes, the available supply of BBD in the United States has grown each year. This growing supply of BBD allowed EPA to establish higher advanced biofuel standards, and to realize the GHG benefits associated with greater volumes of advanced biofuel, than would otherwise have been possible in light of the continued shortfall in the

[199] All types of advanced biofuel, including biomass-based diesel and cellulosic biofuel, must achieve lifecycle greenhouse gas reductions of at least 50%.

availability of cellulosic biofuel. It is in this context that we determined that steadily increasing the BBD requirements was appropriate to encourage continued investment and innovation in the BBD industry, providing necessary assurances to the industry to increase production, while also serving the long term goal of the RFS statute to increase volumes of advanced biofuels over time.

Although the BBD industry has performed well in recent years, we believe that for 2018 a continued appropriate increase in the BBD volume requirement will help provide stability to the BBD industry and encourage continued growth. This industry is currently the single largest contributor to the advanced biofuel pool, one that to date has been largely responsible for providing the growth in advanced biofuels envisioned by Congress. Nevertheless, many factors that impact the viability of the BBD industry in the United States, such as commodity prices and the biodiesel tax credit, remain uncertain. Continuing to increase the BBD volume requirement should help to provide market conditions that allow these BBD production facilities to operate with greater certainty. This result is consistent with the goals of the Act to increase the production and use of advanced biofuels (for further discussion of these issues see 80 FR 77492).

3. BBD Volume for 2018

With the considerations discussed in Section IV.B.2 in mind, as well as our analysis of the factors specified in the statute, we are setting the applicable volume of BBD at 2.1 billion gallons for 2018. This volume represents an annual increase of 100 million gallons over the applicable volume of BBD in 2017. We believe this is appropriate for the same reasons reflected in the December 14, 2015 final rule: To provide additional

support for the BBD industry while allowing room within the advanced biofuel volume requirement for the participation of non-BBD advanced fuels. Although we are not setting the advanced biofuel volume requirement for 2018 at this time, we anticipate that the 2018 advanced biofuel requirement will be larger than the 2017 advanced biofuel volume requirement, and the 2018 BBD volume requirement reflects this anticipated approach. Our assessment of the required statutory factors, summarized in the next section and in a memorandum to the docket, supports this approach.[200]

We believe this approach strikes the appropriate balance between providing a market environment where the development of other advanced biofuels is incentivized, while also maintaining support for growth in BBD volumes. Given the volumes for advanced biofuel we anticipate requiring in 2018, setting the BBD standard in this manner would continue to allow a considerable portion of the advanced biofuel volume to be satisfied by either additional gallons of BBD or by other unspecified types of qualifying advanced biofuels.

C. Consideration of Statutory Factors for 2018

In this section we discuss our consideration of the statutory factors set forth in CAA section 211(o)(2)(B)(ii)(I)–(VI). As noted earlier in Section IV.B.2, the BBD volume requirement is nested within the advanced biofuel requirement and the advanced biofuel requirement is, in turn, nested within the total renewable fuel volume requirement. This means that any BBD produced beyond the mandated BBD volume can be used to satisfy both these other applicable volume require-

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[200] "Memorandum to docket: Final Statutory Factors Assessment for the 2018 Biomass-Based Diesel (BBD) Applicable Volumes."

ments. The result is that in considering the statutory factors we must consider the potential impacts of increasing BBD in comparison to other advanced biofuels.[201] For a given advanced biofuel standard, greater or lesser BBD volume requirements do not change the amount of advanced biofuel used to displace petroleum fuels; rather, increasing the BBD requirement may result in the displacement of other types of advanced biofuels that could have been used to meet the advanced biofuels volume requirement.

Consistent with our 2017 approach in setting the final BBD volume requirement, EPA's primary assessment of the statutory factors for the final 2018 BBD applicable volume is that because the BBD requirement is nested within the advanced biofuel volume requirement, we expect that the final 2018 advanced volume requirement, when set next year, will largely determine the level of BBD production and imports that occur in 2018. Therefore, EPA continues to believe that the same overall volume of BBD would likely be supplied in 2018 regardless of the BBD volume we mandate for 2018 in this final rule. This assessment is based, in part, on our review of the RFS program implementation to date, as discussed above in Section VI.B.1–VI.B–2.

As we stated in our proposal, even though we are not setting the 2018 advanced biofuel volume requirement in this final rule, the final BBD volume requirement

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[201] While excess BBD production could also displace conventional renewable fuel under the total renewable standard, as long as the BBD applicable volume is significantly lower than the advanced biofuel applicable volume our action in setting the BBD applicable volume is not expected to displace conventional renewable fuel under the total renewable standard, but rather other advanced biofuels. See Table V. C–1.

for 2018 that we are establishing in this action is not expected to impact the volume of BBD that is actually produced and imported during the 2018-time period. Thus we do not expect our final 2018 BBD volume requirement to result in a difference in the factors we are required to consider pursuant to CAA section 211(o)(2)(B)(ii)(I)–(VI). However, we note that our approach of setting BBD volume requirement at a higher level in 2018 (as we did in 2017), while still at a volume level lower than the anticipated overall production and consumption of BBD in 2018, is consistent with our evaluation of statutory factors in CAA sections 211(o)(2)(B)(ii) (I), (II) and (III), since we continue to believe that our decision on the BBD volume requirement can have a positive impact on the future development and marketing of other advanced biofuels and can also result in potential environmental and energy security benefits, while still sending a supportive signal to potential BBD investors, consistent with the objectives of the Act to encourage the continued growth in production and use of renewable fuels, and in particular, advanced renewable fuels.

Even though we are finalizing only the 2018 BBD volume requirement at this time and not the 2018 advanced biofuel requirement, we believe that our primary assessment with respect to the 2018 BBD volume requirement is appropriate, as is clear from the fact that the reasoning and analysis would apply even if we did not increase the 2018 advanced biofuel requirement above 2017 levels.[202] Nevertheless, we anticipate

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[202] As explained in Section IV, in deriving the 2017 advanced biofuel applicable volume requirement, we assumed that 2.4 billion gallons of BBD (3.72 billion RINs) would be used to satisfy the 4.28 bill gal advanced biofuel requirement. Thus the man-

that the 2018 advanced biofuel requirement will be set to reflect reasonably attainable and appropriate volumes in the use of all advanced biofuels, similar to the approach used in this rule, and that the advanced biofuel volume standard will be larger in 2018 than in 2017.

As an additional supplementary assessment, we have considered the potential impacts of modifying the 2018 BBD volume requirement from the level of 2.1 billion gallons based on the assumption that in guaranteeing the BBD volume at any given level there could be greater use of BBD and a corresponding decrease in the use of other types of advanced biofuels. However, setting a BBD volume requirement higher or lower than 2.1 billion gallons in 2018 would only be expected to impact BBD volumes on the margin, protecting to a lesser or greater degree BBD from being outcompeted by other advanced biofuels. In this supplementary assessment we have considered all of the statutory factors found in CAA section 211(2)(B)(ii), and as described in a memorandum to the docket,[203] our assessment does not appear, based on available information, to provide a reasonable basis for setting a higher or lower volume requirement for BBD than 2.1 billion gallons for 2018.

Overall and as described in our final memoran dum to the docket, we have determined that both the primary assessment and the supplemental assessment of the statutory factors specified in CAA section 211(o)(2)(B)(ii)(I)–(VI) for the year 2018 does not pro-

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dated 2018 BBD applicable volume is less than we anticipate will actually be used in 2017.

[203] "Memorandum to docket: Final Statutory Factors Assessment for the 2018 Biomass-Based Diesel (BBD) Applicable Volumes."

vide significant support for setting the BBD standard at a level higher or lower than 2.1 billion gallons in 2018.

The EPA received numerous comments pertaining to the consideration of the statutory factors for the 2018 BBD volume requirement. Many of these comments were made previously in response to last year's proposal to set the 2017 BBD volume requirement at 2.0 billion as part of the renewable fuels program's annual rulemaking.[204] Below we reiterate our responses to a number of key issues which continue to be raised by the National Biodiesel Board (NBB). Additional comments and EPA responses can be found in the Response to Comment document that accompanies this final rule.

NBB restated its claim that we improperly based our consideration of the statutory factors on a comparison of BBD to other advanced biofuels, rather than to diesel fuel. They continued to suggest that setting the BBD standard at a higher level than proposed would actually result in BBD competing against diesel fuel, and therefore, EPA should analyze the impacts of displacing diesel fuel with BBD in its statutory factors analysis. We continue to disagree. In setting the advanced biofuel volume requirement, we have assumed reasonably attainable and appropriate volumes in BBD and other advanced biofuels. After determining that it is in the interest of the program, as described in Section VI.B.2 to set the BBD volume requirement at a level below anticipated BBD production and imports, so as to provide continued incentives for research and development of alternative advanced bio-

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[204] Renewable Fuel Standard Program: Standards for 2014, 2015, and 2016 and Biomass-Based Diesel Volume for 2017; Final Rule. 80 FR 77420.

fuels, it is apparent that excess BBD above the BBD volume requirement will compete with other advanced biofuels, rather than diesel.[205] The only way for EPA's action on the BBD volume requirement to result in a direct displacement of petroleum-based fuels, rather than other advanced biofuels, would be if the BBD volume requirement were set larger than the total renewable fuel requirement. However, since BBD is a type of advanced biofuel, and advanced biofuel is a type of renewable fuel, the BBD volume requirement could never be larger than the advanced requirement and the advanced biofuel requirement could never be larger than the total renewable fuel requirement.

NBB also continues to assert that our analysis of the desirability of setting the BBD volume requirement in a manner that would promote the development and use of a diverse array of advanced biofuels is prohibited by statute. We disagree with these comments and continue to believe that the statutory volumes of renewable fuel established by Congress in CAA section 211(o)(2)(B) provide an opportunity for other advanced

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[205] The possibility for competition between BBD and other types of advanced biofuels is not precluded by our setting the advanced biofuel requirement at a level that reflects reasonably attainable volumes of all advanced biofuel types, or by our setting the total renewable fuel volume requirement at a level that also reflects the reasonably achievable volume of all fuel types. Any of our estimates related to a particular fuel type could prove to be either an over or under estimate. We are confident that the sum of all individual estimates used in setting the applicable volumes for 2017 as well as the 2018 BBD volume requirement at an appropriate level are reasonable, and more accurate than our individual estimates for any particular fuel type. It is at the margin where our estimates regarding production and import of individual fuel types may be in error that competition between qualifying fuels can take place.

biofuels (advanced biofuels that do not qualify as cellulosic biofuel or BBD) to be used to satisfy the advanced biofuel standard after the cellulosic biofuel and BBD standards have been met. Ensuring that a diversity of renewable biofuels are produced is consistent with CAA section 211 (o)(2)(A)(i), which requires that the EPA "ensure that transportation fuel sold, or introduced into commerce in the United States . . . contains at least the applicable volume of renewable fuel, advanced biofuels, cellulosic biofuel, and biomass-based diesel . . .". Because the BBD standard is nested within the advanced biofuel and total renewable fuel standards, when an obligated party retires a BBD RIN (D4) to satisfy their obligation, this RIN also counts towards meeting their advanced biofuel and total renewable fuel obligations. It also means that obligated parties may use BBD RINs in excess of their BBD obligations to satisfy their advanced biofuel and total renewable fuel obligations. To the extent that obligated parties are required to achieve compliance with the overall advanced biofuel standard using higher volumes of BBD D4 RINs, they forgo the use of other biofuels considered advanced biofuels to meet the advanced biofuel requirement. Therefore, the higher the BBD volume standard is, the lower the opportunity for other non-BBD advanced biofuels to compete for market share within the context of the advanced biofuel standard. When viewed in a long-term perspective, BBD can be seen as competing for research and development dollars with other types of advanced biofuels for participation as advanced biofuels in the RFS program.

Finally, NBB restated its argument that the EPA previously found statutory factors supported greater annual increases in BBD volume requirement for 2013 and the statutory factors analysis developed to justify

the 2017 BBD and now the 2018 volume requirements contradicts the analysis EPA put forward in 2013. We disagree. As in 2013, we have determined that incremental increases in the 2018 BBD volume requirement are appropriate to provide continued support to the BBD industry. We did this in 2013, acknowledging the important role the industry thus far had played in providing advanced biofuels to the marketplace, and in furthering the GHG reduction objectives of the statute. We did not in 2013, and are not today, setting the BBD volume requirement at the maximum potential production volume of BBD.

VII. Percentage Standards for 2017

The renewable fuel standards are expressed as volume percentages and are used by each obligated party to determine their Renewable Volume Obligations (RVOs). Since there are four separate standards under the RFS program, there are likewise four separate RVOs applicable to each obligated party. Each standard applies to the sum of all non-renewable gasoline and diesel produced or imported. The percentage standards are set so that if every obligated party meets the percentages by acquiring and retiring an appropriate number of RINs, then the amount of renewable fuel, cellulosic biofuel, biomass-based diesel (BBD), and advanced biofuel used will meet the applicable volume requirements on a nationwide basis.

Sections III through V provide our rationale and basis for the volume requirements for 2017.[206] The volumes used to determine the percentage standards are shown in Table VII–1.

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[206] The 2017 volume requirement for BBD was established in the 2014–2016 final rule.

TABLE VII–1—VOLUMES FOR USE IN SETTING THE 2017 APPLICABLE PERCENTAGE STANDARDS

[Billion gallons]

Cellulosic biofuel	0.311
Biomass-based diesel[a]	2.00
Advanced biofuel	4.28
Renewable fuel	19.28

For the purposes of converting these volumes into percentage standards, we generally use two decimal places to be consistent with the volume targets as given in the statute, and similarly two decimal places in the percentage standards. However, for cellulosic biofuel we use three decimal places in both the volume requirement and percentage standards to more precisely capture the smaller volume projections and the unique methodology that in some cases results in estimates of only a few million gallons for a single producer.

A. Calculation of Percentage Standards

The formulas used to calculate the percentage standards applicable to producers and importers of gasoline and diesel are provided in § 80.1405. The formulas rely on estimates of the volumes of gasoline and diesel fuel, for both highway and nonroad uses, which are projected to be used in the year in which the standards will apply. The projected gasoline and diesel volumes are provided by EIA, and include ethanol and biodiesel used in transportation fuel. Since the percentage standards apply only to the non-renewable gasoline and diesel produced or imported, the volumes of ethanol and

[a] Represents physical volume.

biodiesel are subtracted out of the EIA projections of gasoline and diesel.

Transportation fuels other than gasoline or diesel, such as natural gas, propane, and electricity from fossil fuels, are not currently subject to the standards, and volumes of such fuels are not used in calculating the annual percentage standards. Since under the regulations the standards apply only to producers and importers of gasoline and diesel, these are the transportation fuels used to set the percentage standards, as well as to determine the annual volume obligations of an individual gasoline or diesel producer or importer.

As specified in the March 26, 2010 RFS2 final rule, the percentage standards are based on energy-equivalent gallons of renewable fuel, with the cellulosic biofuel, advanced biofuel, and total renewable fuel standards based on ethanol equivalence and the BBD standard based on biodiesel equivalence. However, all RIN generation is based on ethanol-equivalence. For example, the RFS regulations provide that production or import of a gallon of qualifying biodiesel will lead to the generation of 1.5 RINs. The formula specified in the regulations for calculation of the BBD percentage standard is based on biodiesel-equivalence, and thus assumes that all BBD used to satisfy the BBD standard is biodiesel and requires that the applicable volume requirement be multiplied by 1.5. However, BBD often contains some renewable diesel, and a gallon of renewable diesel typically generates 1.7 RINs.[207] In addition, there is often some renewable diesel in the conventional renewable fuel pool. As a result, the actual number of RINs generated by biodiesel and renewable

[207] Although in some cases a gallon of renewable diesel generates either 1.5 or 1.6 RINs.

diesel is used in the context of our assessing reasonably attainable volumes for purposes of deriving the applicable volume requirements and associated percentage standards for advanced biofuel and total renewable fuel, and likewise in obligated parties' determination of compliance with any of the applicable standards. While there is a difference in the treatment of biodiesel + renewable diesel in the context of determining the percentage standard for BBD versus determining the percentage standard for advanced biofuel and total renewable fuel, it is not a significant one given our approach to determining the BBD volume requirement; o. Our intent in setting the BBD applicable volume is to provide an additional increment of guaranteed volume for BBD, but as described in Section VI.B, we do not expect the BBD standard to be binding. That is, we expect that actual supply of BBD, as well as supply of conventional biodiesel + renewable diesel, will be driven by the advanced biofuel and total renewable fuel standards.

B. Small Refineries and Small Refiners

In CAA section 211(o)(9), enacted as part of the Energy Policy Act of 2005, and amended by the Energy Independence and Security Act of 2007, Congress provided a temporary exemption to small refineries[208] through December 31, 2010. Congress provided that small refineries could receive a temporary extension of the exemption beyond 2010 based either on the results of a required DOE study, or based on an EPA determination of "disproportionate economic hardship" on a case-by-case basis in response to small refinery petitions. In reviewing petitions, EPA, in consultation with

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[208] A small refiner that meets the requirements of 40 CFR 80.1442 may also be eligible for an exemption.

the Department of Energy, evaluates the impacts petitioning refineries would likely face in achieving compliance with the RFS requirements and how compliance would affect their ability to remain competitive and profitable.

EPA has granted some exemptions pursuant to this process in the past. However, at this time, no exemptions have been approved for 2017, and therefore we have calculated the percentage standards for this year without an adjustment for exempted volumes. Any requests for exemptions for 2017 that are approved after the final rule is released will not be reflected in the percentage standards that apply to all gasoline and diesel produced or imported in 2017. As stated in the final rule establishing the 2011 standards, "EPA believes the Act is best interpreted to require issuance of a single annual standard in November that is applicable in the following calendar year, thereby providing advance notice and certainty to obligated parties regarding their regulatory requirements. Periodic revisions to the standards to reflect waivers issued to small refineries or refiners would be inconsistent with the statutory text, and would introduce an undesirable level of uncertainty for obligated parties."[209]

C. Final Standards

The formulas in § 80.1405 for the calculation of the percentage standards require the specification of a total of 14 variables covering factors such as the renewable fuel volume requirements, projected gasoline and diesel demand for all states and territories where the RFS program applies, renewable fuels projected by EIA to be included in the gasoline and diesel demand, and exemptions for small refineries. The values of all

[209] See 75 FR 76804 (December 9, 2010).

the variables used for this final rule are shown in Table VII.C–1.[210]

TABLE VII.C–1—VALUES FOR TERMS IN CALCULATION OF THE 2017 STANDARDS[211]
[Billion gallons]

Term	Description	Value
RFV_{CB}	Required volume of cellulosic biofuel	0.311
RFV_{BBD}	Required volume of biomass-based diesel	2.00
RFV_{AB}	Required volume of advanced biofuel	4.28
RFV_{RF}	Required volume of renewable fuel	19.28
G	Projected volume of gasoline	143.61
D	Projected volume of diesel	53.15
RG	Projected volume of renewables in gasoline	14.35
RD	Projected volume of renewables in diesel	2.28
GS	Projected volume of gasoline for opt-in areas	0.00
RGS	Projected volume of renewables in gasoline for opt-in areas	0.00
DS	Projected volume of diesel for opt-in areas	0.00
RDS	Projected volume of renewables in diesel for opt-in areas	0.00
GE	Projected volume of gasoline for exempt small refineries	0.00
DE	Projected volume of diesel for exempt small refineries	0.00

Projected volumes of gasoline and diesel, and the renewable fuels contained within them, were provided by EIA and are consistent with the October, 2016 version of EIA's Short-Term Energy Outlook (STEO).[212] These projections reflect EIA's judgment of future demand volumes in 2017, accounting for the low oil price environment in 2016.

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[210] To determine the 49-state values for gasoline and diesel, the amounts of these fuels used in Alaska is subtracted from the totals provided by DOE. The Alaska fractions are determined from the June 29, 2016 EIA State Energy Data System (SEDS), Energy Consumption Estimates.

[211] See "Calculation of final % standards for 2017" in docket EPA–HQ–OAR–2016–0004.

[212] "EIA projections of transportation fuel for 2017," docket EPA–HQ–OAR–2016–0004.

Using the volumes shown in Table VII.C–1, we have calculated the percentage standards for 2017 as shown in Table VII.C–2.

TABLE VII.C–2—FINAL PERCENTAGE STANDARDS FOR 2017

Cellulosic biofuel	0.173
Biomass-based diesel	1.67
Advanced biofuel	2.38
Renewable fuel	10.70

VIII. Assessment of Aggregate Compliance

A. Assessment of the Domestic Aggregate Compliance Approach

The RFS2 regulations contain a provision for renewable fuel producers who use planted crops and crop residue from U.S. agricultural land that relieves them of the individual recordkeeping and reporting requirements concerning the specific land from which their feedstocks were harvested. To enable this approach, EPA established a baseline number of acres for U.S. agricultural land in 2007 (the year of EISA enactment) and determined that as long as this baseline number of acres was not exceeded, it was unlikely that new land outside of the 2007 baseline would be devoted to crop production based on historical trends and economic considerations. We therefore provided that renewable fuel producers using planted crops or crop residue from the U.S. as feedstock in renewable fuel production need not comply with the individual recordkeeping and reporting requirements related to documenting that their feedstocks are renewable biomass, unless EPA determines through one of its annual evaluations that the 2007 baseline acreage of 402 million acres agricultural land has been exceeded.

In the final RFS2 regulations, EPA committed to make an annual finding concerning whether the 2007 baseline amount of U.S. agricultural land has been exceeded in a given year. If the baseline is found to have been exceeded, then producers using U.S. planted crops and crop residue as feedstocks for renewable fuel production would be required to comply with individual recordkeeping and reporting requirements to verify that their feedstocks are renewable biomass.

The Aggregate Compliance methodology provided for the exclusion of acreage enrolled in the Grassland Reserve Program (GRP) and the Wetlands Reserve Program (WRP) from the estimated total U.S. agricultural land. However, the 2014 Farm Bill terminated the GRP and WRP as of 2013 and USDA established the Agriculture Conservation Easement Program (ACEP) with wetlands and land easement components. The ACEP provides financial and technical assistance to help conserve agricultural lands and wetlands and their related benefits. Under the Agricultural Land Easements (ACEP–ALE) component, USDA helps Indian tribes, state and local governments and non-governmental organizations protect working agricultural lands and limit non-agricultural uses of the land. Under the Wetlands Reserve Easements (ACEP–WRE) component, USDA helps to restore, protect and enhance enrolled wetlands. The WRP was a voluntary program that offered landowners the opportunity to protect, restore, and enhance wetlands on their property. The GRP was a voluntary conservation program the emphasized support for working grazing operations, enhancement of plant and animal biodiversity, and protection of grassland under threat of conversion to other uses.

USDA and EPA concur that the ACEP–WRE and ACEP–ALE represent a continuation in basic objectives and goals of the original WRP and GRP. Therefore, it was assumed in this rulemaking that acreage enrolled in the easement programs would represent a reasonable proxy of WRP and GRP acreage and was excluded when estimating total U.S. agricultural land.

Based on data provided by the USDA Farm Service Agency (FSA) and Natural Resources Conservation Service (NRCS), we have estimated that U.S. agricultural land reached approximately 380 million acres in 2016, and thus did not exceed the 2007 baseline acreage. This acreage estimate is based on the same methodology used to set the 2007 baseline acreage for U.S. agricultural land in the RFS2 final rulemaking, with the GRP and WRP substitution as noted above. Specifically, we started with FSA crop history data for 2016, from which we derived a total estimated acreage of 380,429,574 acres. We then subtracted the ACEP–ALE and ACEP–WRE enrolled areas by the end of Fiscal Year 2016, 313,284 acres, to yield an estimate of approximately 380 million acres of U.S. agricultural land in 2016. Note that these programs were still in place in 2016. The USDA data used to make this derivation can be found in the docket to this rule.[213]

B. Assessment of the Canadian Aggregate Compliance Approach

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[213] For the first time since 2013, USDA provided EPA with data on legacy acreage still covered by the discontinued GRP and WRP. Given this new data, EPA also estimated the total U.S. agricultural land taking the GRP and WRP acreage into account. In 2016, combined land under GRP and WRP totaled 2,966,122 acres. Factoring in the GRP, WRP, ACEP–WRE, and ACEP–ALE data yields an estimate of 377,150,168 acres or approximately 377 million total acres of U.S. agricultural land in 2016.

On March 15, 2011, EPA issued a notice of receipt of and solicited public comment on a petition for EPA to authorize the use of an aggregate approach for compliance with the Renewable Fuel Standard renewable biomass requirements, submitted by the Government of Canada. The petition requested that EPA determine that an aggregate compliance approach will provide reasonable assurance that planted crops and crop residue from Canada meet the definition of renewable biomass. After thorough consideration of the petition, all supporting documentation provided and the public comments received, EPA determined that the criteria for approval of the petition were satisfied and approved the use of an aggregate compliance approach to renewable biomass verification for planted crops and crop residue grown in Canada.

The Government of Canada utilized several types of land use data to demonstrate that the land included in their 124 million acre baseline is cropland, pastureland or land equivalent to U.S. Conservation Reserve Program land that was cleared or cultivated prior to December 19, 2007, and was actively managed or fallow and non-forested on that date (and is therefore RFS2 qualifying land). The total agricultural land in Canada in 2016 is estimated at 118.4 million acres. This total agricultural land area includes 94.6 million acres of cropland and summer fallow, 14.0 million acres of pastureland and 9.8 million acres of agricultural land under conservation practices. This acreage estimate is based on the same methodology used to set the 2007 baseline acreage for Canadian agricultural land in the RFS2 response to petition. The trigger point for further evaluation of the data for subsequent years, provided by Canada, is 124 million acres. The data used to make this calculation can be found in the docket to this rule.

IX. Public Participation

Many interested parties participated in the rulemaking process that culminates with this final rule. This process provided opportunity for submitting written public comments following the proposal that we published on May 31, 2016 (81 FR 34778), and we also held a public hearing on June 9, 2016, at which many parties provided both verbal and written testimony. All comments received, both verbal and written, are available in EPA docket EPA–HQ–OAR–2016–0004 and we considered these comments in developing the final rule. Public comments and EPA responses are discussed throughout this preamble and in the accompanying RTC document, which is available in the docket for this action.

X. 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 an economically 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. The EPA prepared an analysis of illustrative costs associated with this action. This analysis is presented in Section V.D of this preamble.

B. Paperwork Reduction Act (PRA)

This action does not impose any new information collection burden under the PRA. OMB has previously approved the information collection activities contained in the existing regulations and has assigned OMB control numbers 2060–0637 and 2060–0640. The final standards will not impose new or different reporting

requirements on regulated parties than already exist for the RFS program.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden, or otherwise has a positive economic effect on the small entities subject to the rule.

The small entities directly regulated by the RFS program are small refiners, which are defined at 13 CFR 121.201. We have evaluated the impacts of this final rule on small entities from two perspectives: As if the 2017 standards were a standalone action or if they are a part of the overall impacts of the RFS program as a whole.

When evaluating the standards as if they were a standalone action separate and apart from the original rulemaking which established the RFS2 program, then the standards could be viewed as increasing the volumes required of obligated parties between 2016 and 2017. To evaluate this rule from this perspective, EPA has conducted a screening analysis[214] to assess whether it should make a finding that this action would not have a significant economic impact on a substantial number of small entities. Currently-available infor-

[214] "Updated Screening Analysis for the Final Renewable Fuel Standard Program Renewable Volume Obligations for 2017", memorandum from Dallas Burkholder and Tia Sutton to EPA Air Docket EPA–HQ–OAR–2016–0004.

mation shows that the impact on small entities from implementation of this rule would not be significant. EPA has reviewed and assessed the available information, which suggests that obligated parties, including small entities, are generally able to recover the cost of acquiring the RINs necessary for compliance with the RFS standards through higher sales prices of the petroleum products they sell than would be expected in the absence of the RFS program.[215], [216] This is true whether they acquire RINs by purchasing renewable fuels with attached RINs or purchase separated RINs. Even if we were to assume that the cost of acquiring RINs were not recovered by obligated parties, and we used the maximum values of the illustrative costs discussed in Section V.D and the gasoline and diesel fuel volume projections and wholesale prices from the October 2016 version of EIA's Short-Term Energy Outlook, and current wholesale fuel prices, a cost-to-sales ratio test shows that the costs to small entities of the RFS standards are far less than 1% of the value of their sales.

While the screening analysis described above supports a certification that this rule would not have a significant economic impact on small refiners, we continue to believe that it is more appropriate to consider

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[215] For a further discussion of the ability of obligated parties to recover the cost of RINs see "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effects," Dallas Burkholder, Office of Transportation and Air Quality, US EPA. May 14, 2015, EPA Air Docket EPA–HQ–OAR–2015–0111.

[216] Knittel, Christopher R., Ben S. Meiselman, and James H. Stock. "The Pass-Through of RIN Prices to Wholesale and Retail Fuels under the Renewable Fuel Standard." Working Paper 21343. NBER Working Paper Series. Available online *http://www.nber.org/papers/w21343.pdf*.

the standards as a part of ongoing implementation of the overall RFS program. When considered this way, the impacts of the RFS program as a whole on small entities were addressed in the RFS2 final rule (75 FR 14670, March 26, 2010), which was the rule that implemented the entire program required by the Energy Independence and Security Act of 2007 (EISA 2007). As such, the Small Business Regulatory Enforcement Fairness Act (SBREFA) panel process that took place prior to the 2010 rule was also for the entire RFS program and looked at impacts on small refiners through 2022.

For the SBREFA process for the RFS2 final rule, EPA conducted outreach, fact-finding, and analysis of the potential impacts of the program on small refiners, which are all described in the Final Regulatory Flexibility Analysis, located in the rulemaking docket (EPA–HQ–OAR–2005–0161). This analysis looked at impacts to all refiners, including small refiners, through the year 2022 and found that the program would not have a significant economic impact on a substantial number of small entities, and that this impact was expected to decrease over time, even as the standards increased. For gasoline and/or diesel small refiners subject to the standards, the analysis included a cost-to-sales ratio test, a ratio of the estimated annualized compliance costs to the value of sales per company. From this test, it was estimated that all directly regulated small entities would have compliance costs that are less than one percent of their sales over the life of the program (75 FR 14862).

We have determined that this final rule will not impose any additional requirements on small entities beyond those already analyzed, since the impacts of this final rule are not greater or fundamentally differ-

ent than those already considered in the analysis for the RFS2 final rule assuming full implementation of the RFS program. As shown above in Tables I–1 and I.A–1 (and discussed further in Sections III, IV, and V), this rule establishes the 2017 volume requirements for cellulosic biofuel, advanced biofuel, and total renewable fuel at levels significantly below the statutory volume targets. This exercise of EPA's waiver authority reduces burdens on small entities, as compared to the burdens that would be imposed under the volumes specified in the Clean Air Act in the absence of waivers—which are the volumes that we assessed in the screening analysis that we prepared for implementation of the full program. Regarding the biomass-based diesel standard, we are increasing the volume requirement for 2018 over the statutory minimum value of 1 billion gallons. However, this is a nested standard within the advanced biofuel category, which we are significantly reducing from the statutory volume targets. As discussed in Section VI, we are setting the 2018 biomass-based diesel volume requirement at a level below what is anticipated will be produced and used to satisfy the reduced advanced biofuel requirement. The net result of the standards being established in this action is a reduction in burden as compared to implementation of the statutory volume targets, as was assumed in the RFS2 final rule analysis.

While the rule will not have a significant economic impact on a substantial number of small entities, there are compliance flexibilities in the program that can help to reduce impacts on small entities. These flexibilities include being able to comply through RIN trading rather than renewable fuel blending, 20% RIN rollover allowance (up to 20% of an obligated party's RVO can be met using previous-year RINs), and deficit carry-forward (the ability to carry over a deficit from a given year

into the following year, providing that the deficit is satisfied together with the next year's RVO). In the RFS2 final rule, we discussed other potential small entity flexibilities that had been suggested by the SBREFA panel or through comments, but we did not adopt them, in part because we had serious concerns regarding our authority to do so.

Additionally, as we realize that there may be cases in which a small entity experiences hardship beyond the level of assistance afforded by the program flexibilities, the program provides hardship relief provisions for small entities (small refiners), as well as for small refineries.[217] As required by the statute, the RFS regulations include a hardship relief provision (at 40 CFR 80.1441(e)(2)) that allows for a small refinery to petition for an extension of its small refinery exemption at any time based on a showing that compliance with the requirements of the RFS program would result in the refinery experiencing a "disproportionate economic hardship." EPA regulations provide similar relief to small refiners that are not eligible for small refinery relief. A small refiner may petition for a small refiner exemption based on a similar showing that compliance with the requirements of the RFS program would result in the refiner experiencing a "disproportionate economic hardship" (see 40 CFR 80.1442(h)). EPA evaluates these petitions on a case-by-case basis and may approve such petitions if it finds that a disproportionate economic hardship exists. In evaluating such petitions, EPA consults with the U.S. Department of Energy, and takes the findings of DOE's 2011 Small Refinery Study and other economic factors into consideration. EPA successfully implemented these

[217] See CAA section 211(o)(9)(B).

provisions by evaluating petitions for exemption from 13 small refineries for the 2014 RFS standards.

Given that this final rule will not impose additional requirements on small entities, would decrease burden via a reduction in required volumes as compared to statutory volume targets, would not change the compliance flexibilities currently offered to small entities under the RFS program (including the small refinery hardship provisions we continue to successfully implement), and available information shows that the impact on small entities from implementation of this rule would not be significant viewed either from the perspective of it being a standalone action or a part of the overall RFS program, we have therefore concluded that this action would have no net regulatory burden for directly regulated small entities.

D. Unfunded Mandates Reform Act (UMRA)

This final action contains a federal mandate under UMRA, 2 U.S.C. 1531–1538, that may result in expenditures of $100 million or more for state, local and tribal governments, in the aggregate, or the private sector in any one year. Accordingly, the EPA has prepared a written statement required under section 202 of UMRA. This statement is presented in Section V.D in the form of illustrative cost estimates of the 2017 RFS standards. This action implements mandates specifically and explicitly set forth in CAA section 211(o) and we believe that this action represents the least costly, most cost-effective approach to achieve the statutory requirements of the rule.

This action is not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

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

This action does not have tribal implications as specified in Executive Order 13175. This final rule will be implemented at the Federal level and affects transportation fuel refiners, blenders, marketers, distributors, importers, exporters, and renewable fuel producers and importers. Tribal governments would be affected only to the extent they produce, purchase, and use regulated fuels. Thus, Executive Order 13175 does not apply to this action.

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

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of "covered regulatory action" in section 2–202 of the Executive Order. This action is not subject to Executive Order 13045 because it implements specific standards established by Congress in statutes (CAA section 211(o)) and does not concern an environmental health risk or safety risk.

H. 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. This action establishes the required renewable fuel content of the transportation fuel supply for 2017, consistent with the CAA and waiver authorities provided therein. The RFS program and this rule are designed to achieve positive effects on the nation's transportation fuel supply, by increasing energy independence and lowering lifecycle greenhouse gas emissions of transportation fuel.

I. National Technology Transfer and Advancement Act (NTTAA)

This rulemaking does not involve technical standards.

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

The 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). This final rule does not affect the level of protection provided to human health or the environment by applicable air quality standards. This action does not relax the control measures on sources regulated by the RFS regulations and therefore would not cause emissions increases from these sources.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is a "major rule" as defined by 5 U.S.C. 804(2).

XI. 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 final rule come from sections 114, 208, and 301(a) of the Clean Air Act, 42 U.S.C. 7414, 7542, and 7601(a).

List of Subjects in 40 CFR Part 80

Environmental protection, Administrative practice and procedure, Air pollution control, Diesel fuel, Fuel additives, Gasoline, Imports, Oil imports, Petroleum, Renewable fuel.

Dated: November 23, 2016.

Gina McCarthy,
Administrator.

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

PART 80—REGULATION OF FUELS 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 M—[Amended]

- 2. Section 80.1405 is amended by adding new paragraph (a)(8) to read as follows:

§80.1405 What are the Renewable Fuel Standards?

(a) * * *

(8) *Renewable Fuel Standards for 2017.*

(i) The value of the cellulosic biofuel standard for 2017 shall be 0.173 percent.

(ii) The value of the biomass-based diesel standard for 2017 shall be 1.67 percent.

(iii) The value of the advanced biofuel standard for 2017 shall be 2.38 percent.

(iv) The value of the renewable fuel standard for 2017 shall be 10.70 percent.

* * * * *

[FR Doc. 2016–28879 Filed 12–9–16; 8:45 am]

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APPENDIX F

U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF TRANSPORTATION AND AIR QUALITY

ASSESSMENT AND STANDARDS DIVISION

EPA-420-R-17-008

Denial of Petitions for Rulemaking to Change the RFS Point of Obligation

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November 2017

Executive Summary

The Environmental Protection Agency (EPA) has received several petitions requesting that the EPA initiate a rulemaking process to reconsider or change 40 CFR 80.1406 identifying refiners and importers of gasoline and diesel fuel as the entities responsible for complying with the annual percentage standards adopted under the Renewable Fuel Standard (RFS) program. This "point of obligation" for the RFS program was established through a notice-and-comment rulemaking in 2010 based on the statutory direction in Section 211(o)(3)(B)(ii)(I) and (C) of the Clean Air Act (CAA) to impose the renewable fuel obligation on "refineries, blenders and importers, as appropriate," while also "prevent[ing] the imposition of redundant obligations." This statutory provision also allows EPA

to modify the point of obligation if the designated parties are no longer appropriate. While evaluating petitions on the RFS point of obligation, EPA also evaluated whether the current obligated parties remain the appropriate obligated parties under CAA 211(o)(3)(B)(ii)(I). EPA has concluded that it is appropriate to retain the current regulatory requirement designating refiners and importers as the parties responsible for compliance with RFS standards because we again believe refiners and importers are the appropriate obligated parties.

In their initial petitions, the petitioners all asked to have the point of obligation shifted from refiners and importers, but they differed somewhat in their suggestions for alternatives. Some requested that the EPA shift the point of obligation from refiners and importers to those parties that blend renewable fuel into transportation fuel. Others suggested that it be shifted to those parties that hold title to the gasoline or diesel fuel immediately prior to the sale of these fuels at the terminal (these parties are commonly called the "position holders"), or to "blenders and distributors." All petitioners argued, among other things, that shifting the point of obligation to parties downstream of refiners and importers in the fuel distribution system would align compliance responsibilities with the parties best positioned to make decisions on how much renewable fuel is blended into the transportation fuel supply in the United States. Some of the petitioners further claimed that changing the point of obligation would result in an increase in the production, distribution, and use of renewable fuels in the United States and would reduce the cost of transportation fuel to consumers.

On November 10, 2016, the EPA published a proposed denial of requests to initiate a rulemaking process to reconsider or change the regulations at 40 CFR 80.1406. See Proposed Denial of Petitions for Rulemaking to Change the RFS Point of Obligation, EPA-HQ-OAR-2016-0544, hereinafter "proposed denial." The EPA solicited comment from interested stakeholders on the proposed denial. Acting on the request of stakeholders, the EPA extended the public comment period to February 22, 2017. The EPA received over 18,000 comments submitted to the docket. The EPA's response to significant and relevant comments is provided within this document. Notwithstanding the different suggestions for shifting the point of obligation that were expressed in the initial petitions, in their comments, all petitioners suggested that the definition of "obligated party" in 40 CFR 80.1406 should be changed to put the obligation for compliance with the RFS percentage standards on "position holders."[1]

The Administrator is today denying all petitions seeking initiation of a rulemaking process to change the definition of obligated party under the RFS program. Our conclusion reflects consideration of the alleged benefits that Petitioners and some commenters have suggested would ensue from a change in the point of obligation, as well as negative impacts that the EPA believes would result from such a change. In our judgment, it does not appear that the record before the Agency indicates that a change in the point of obligation would result in net overall benefits to the

[1] The Small Refiners Coalition and others, in comment, argued in the alternative that the point of obligation could be placed on blenders if the EPA lacks the authority to place the point of obligation on "position holders."

program. In addition, however, we believe that changing the point of obligation at this time would be very disruptive to the program, and likely the fuels marketplace as well, undermining long settled expectations and the program stability and certainty that are critical to both short- and long-term success of the program. Thus, even if there were some marginal net benefits to changing the point of obligation, we believe that the disruptive effects of a change at this time would still warrant denial.

As discussed in more detail below, the current structure of the RFS program is working to incentivize the production, distribution, and use of renewable transportation fuels in the United States, while providing obligated parties a number of options for acquiring the RINs they need to comply with the RFS standards. We do not believe that the petitioners have demonstrated that changing the point of obligation would likely result in increased use of renewable fuels. Based on the information currently available to the EPA, changing the point of obligation would not address challenges associated with commercializing cellulosic biofuel technologies and the marketplace dynamics that inhibit the increase of fuels containing higher levels of ethanol, two of the primary issues that limit the rate of growth in the supply of renewable fuels today. While we do not anticipate a benefit from changing the point of obligation, we do believe that such a change would significantly increase the complexity of the RFS program, which could negatively impact its effectiveness. EPA is also not persuaded, based on our analysis of available data, including that supplied by petitioners and commenters, by arguments that merchant

refiners[2] are disadvantaged under the current regulations in comparison to integrated refiners in terms of their costs of compliance, nor that other stakeholders such as unobligated blenders are receiving windfall profits. Finally, EPA does not interpret the Clean Air Act as authorizing it to place the point of obligation on distributors or on those "position holders" who are neither refiners [nor*] blenders. For all of these reasons, as further described below, EPA is denying the petitions for reconsideration.

The point of obligation has been placed on refiners and importers since inception of the RFS regulatory program, in 2007. We also believe that in considering whether to embark on a rulemaking exercise to change the regulations, that it is appropriate for EPA to take into consideration the consequences of enacting a change at this time. In the short term we believe that initiating a rulemaking process to reconsider or change the point of obligation would work counter to the program's goals by causing significant upheaval and uncertainty in the fuels marketplace. Such a dynamic would likely cause delays to the investments necessary to expand the supply of renewable fuels in the United States, and strand past investments, particularly investments in cellulosic biofuels, the category of renewable fuels from which much the majority of the statutory volume increases in future years is expected.

In addition, changing the point of obligation could disrupt investments reasonably made by participants

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[2] Merchant refiners are those that market only a minority of the fuels they refine (and in some cases do not market any fuel), often selling the fuel to other parties at the refinery gate for distribution and marketing.

* The original version reads "not."

in the fuels industry in reliance on the regulatory structure the agency established in 2007 and confirmed in 2010. It could also lead to restructuring of the fuels marketplace as newly obligated parties alter their business practices to avoid compliance obligations. For example, if the point of obligation were changed to "position holders," we believe that parties who previously were "position holders" may choose to instead purchase fuel under contract "below the rack" instead of "above the rack" to avoid the overhead compliance costs associated with being an obligated party under the RFS program. We believe these changes would have no beneficial impact on the RFS program or renewable fuel volumes and would decrease competition among parties that buy and sell transportation fuels at the rack, potentially increasing fuel prices for consumers and profit margins for refiners, especially those not involved in fuel marketing.

TABLE OF CONTENTS

I. INTRODUCTION

On March 26, 2010, the Environmental Protection Agency ("EPA") issued a final rule (the "RFS2 Rule")[3] establishing regulatory amendments to the renewable fuel standards ("RFS") program regulations to reflect statutory amendments to Section 211(o) of the Clean Air Act ("CAA" or "the Act") enacted as part of the Energy Independence and Security Act of 2007. These amended regulations included 40 CFR 80.1406, imposing the obligation for compliance with the RFS annual standards on refiners and importers of gasoline and diesel fuel.[4] These entities are referred to in the RFS regulations as "obligated parties." Beginning in 2014, some obligated parties and other stakeholders have questioned whether 40 CFR 80.1406 should be amended, and a number of them have filed formal petitions for reconsideration or revision of the definition of "obligated party" in 40 CFR 80.1406, or petitions for rulemaking to amend the provision.[5] Those parties filing

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[3] 75 Fed. Reg. 14670.

[4] In imposing the fundamental RFS compliance obligation on refiners and importers, the 2010 rule simply continued the practice established under the original RFS program regulations adopted in 2007. See 72 Fed. Reg. 23900 (adopting 40 CFR 80.1106). However, the 2010 rule broadened the number of regulatory parties somewhat to reflect the new EISA requirement imposing blending requirements on diesel fuel, in addition to gasoline, that is used as transportation fuel.

[5] On January 27, 2014, Monroe Energy LCC ("Monroe") filed a "petition to revise" 40 CFR 80.1406 to change the RFS point of obligation, and on January 28, 2016, Monroe filed a "petition for reconsideration" of the regulation. On February 11, 2016, Alon Refining Krotz Springs, Inc.; American Refining Group, Inc.; Calumet Specialty Products Partners, L.P.; Lion Oil Company; Ergon-West Virginia, Inc.; Hunt Refining Company; Placid Refining Company LLC; U.S. Oil & Refining Company (the "Small

petitions for reconsideration also initiated legal challenges of the 2010 rule, alleging that new grounds have arisen enabling them to do so notwithstanding expiration of the 60-day time period generally provided under CAA 307(b) for challenges to CAA rules.[6] These suits have been stayed pending final action by the EPA on the administrative petitions for reconsideration.

Some petitioners[7] that challenged the rule establishing RFS standards for 2014, 2015 and 2016, alleged both that the EPA had a duty to annually reconsider the appropriate obligated parties under the RFS program and that it was required to do so in response to comments suggesting that it could potentially avoid or minimize its exercise of the inadequate domestic supply waiver authority if it did so. In a recent ruling in that

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Refinery Owners Ad Hoc Coalition" or "Coalition") filed a petition for reconsideration of 40 CFR 80.1406. On February 12, 2016, Valero Energy Corporation and its subsidiaries ("Valero") filed a "petition to reconsider and revise" the rule. On June 13, 2016, Valero submitted a petition for rulemaking to change the definition of "obligated party." On August 4, 2016, the American Fuel and Petrochemical Manufacturers ("AFPM") filed a petition for rulemaking to change the definition of "obligated party." On September 2, 2016, Holly Frontier also filed a petition for rulemaking to change the definition of "obligated party." These parties are collectively referred to herein as "the Petitioners."

[6] See Monroe Energy LLC v. EPA, #14-1014. (D.C.Cir. 2014); Monroe Energy LLC v. EPA, #16-1032. (D.C.Cir. 2016); Alon Refining Krotz Springs, Inc. et al v. EPA. #16-1052. (D.C.Cir. 2016); Valero Energy Corperation v. EPA, #16-1055 (D.C.Cir. 2016).

[7] Petitioners Valero Energy Corporation, Alon Refining Krotz Spring, Inc., et al., Monroe Energy LLC, and American Fuel and Petrochemical Manufacturers raised arguments related to the RFS point of obligation in their challenges to EPA's rule setting the RFS percentage standards for 2014, 2015, and 2016.

litigation, the United States Court of Appeals for the District of Columbia Circuit declined to rule on the matter, and instead indicated that the EPA could address the matter either in the context of a remand of the 2014-2016 rule ordered on other grounds, or in response to the administrative petitions.[8] As noted above, the EPA is denying the petitions seeking a change in the definition of "obligated parties." The EPA also is re-affirming that the existing regulation applies in all years going forward unless and until it is revised. The EPA does not agree with the petitioners in the *ACE* case that the statute requires annual reconsideration of the matter and, although the EPA has the discretion under the statute to undertake such annual reevaluations, the EPA declines to do so since we believe the lack of certainty that would be associated with such an approach would undermine success in the program.[9,10]

It appears that the petitions for reconsideration of 40 CFR 80.1406 do not meet the statutory criteria for

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[8] See *Americans for Clean Energy v. Environmental Protection Agency*, *864 F.3d 691* (D.C. Cir. 2017) ("*ACE*").

[9] The EPA interprets the CAA to allow the designation or redesignation of "appropriate" obligated parties to occur at any time, as the phrase "as appropriate" is broad and confers significant discretion. While the statute specifies that the percentage standards must be applicable to refineries, importers, or blenders as appropriate, it does not say that EPA must annual reevaluate the matter.

[10] Nevertheless, the EPA could consider changes to the definition of "obligated party" in the future, based on significant new facts or analysis. Given the time pressure associated with its annual standards rulemakings, EPA expects that any such consideration would not occur in the context of those rulemakings.

such petitions set forth in CAA 307(d)(7)(B).[11] However, for purposes of this decision document, we will treat all petitions suggesting a change in the RFS point of obligation as petitions for a rulemaking to accomplish the change(s) requested.[12] This evaluation provides a consolidated response to all petitions (however styled) and other requests we have received that seek a change in the RFS point of obligation. For the reasons stated herein, we are denying all requests to initiate a rulemaking to change the current regulation.

In considering the petitions to change the point of obligation in the RFS program, the EPA has reviewed the large amount of information submitted by the petitioners and has met with those who requested meetings and other interested parties. The EPA has also met, and heard from, other participants in the RFS program, including other obligated parties, manufac-

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[11] Petitioners had an opportunity to submit comments on the point of obligation in both the 2007 and 2010 rulemakings when the current approach was adopted. The possible impact of this decision on incentivizing growth in renewable fuel use, including incentivizing growth after the clearly anticipated widespread use of ethanol at E10 levels, could have been raised in comments on those rules. Furthermore, to the extent the petitions are based on grounds arising more than 60 days after promulgation of the rule, such grounds are not a proper basis for a petition for reconsideration under CAA 307(d)(7)(B).

[12] We take no position at this time on whether petitions associated with judicial challenges to the RFS2 rule satisfy the criterion in CAA 307(b)(1) that they be "based solely on grounds arising after" the 60-day period following notice of promulgation of CAA rules, or whether the petitions for review were filled within 60 days after new grounds arose. We have considered the substance of the administrative petitions filed with the Agency whether or not the criteria specified in CAA 307(b)(1) for late challenges to Agency rules are satisfied.

turers of renewable fuel, and fuel retailers, who are opposed to revising the regulations. The EPA received over 18,000 comments submitted on its proposed denial, and has reviewed and considered the information submitted. Many of these comments were part of mass comment campaigns, and contained similar messages; however, the EPA received approximately 350 unique comments. See Docket EPA-HQ-OAR-2016-0544. Many commenters presented similar arguments to those put forth by petitioners in their initial requests for reconsideration or rulemaking. EPA also received many comments supporting EPA's proposed denial. Where significant new arguments or information were presented in comments, the EPA has addressed those within this document. EPA also received a number of comments on the RFS point of obligation in response to its proposed 2018 RFS requirements.[13] EPA has reviewed those comments, and where appropriate, addressed them within this document.

Who should be designated an "obligated party" under the RFS program is an issue that has generated significant debate, especially in the last few years, and one that raises complex questions about the appropriate structure of the RFS program. The various parties have presented a wide range of different information and analyses, and some have offered different interpretations of the same information and analyses. The EPA's primary consideration here is whether or not the requested change(s) would improve the effectiveness of the program to achieve Congress's goals, which are to increase energy security and reduce emissions of air pollutants by requiring that increasing volumes of the nation's transportation fuel be comprised of

[13] See Docket EPA-HQ-OAR-2017-0091.

renewable fuels. Each of the individual elements discussed in the analysis below, such as the number and nature of the parties that would become obligated if the EPA were to grant the petitioners' requests, are considered in light of how each of these elements are expected to contribute towards or detract from the overall effectiveness of the program. EPA also has considered the impact of the current regulatory structure, and the proposed alternatives on the groups that would be regulated under these options, with the objective of determining whether the current or alternative options may be more equitable or the burdens more facilely borne.

CAA 211(o)(3)(B)(ii)(I) provides that the annual renewable fuel obligations shall "be applicable to refineries, blenders, and importers, as appropriate." The use of the term "appropriate" in determining the obligated parties provides significant discretion conferred upon EPA. *See Michigan v. EPA*, 135 S. Ct. 2699, 2707 (2015) (explaining that "'appropriate' is the classic broad and all-encompassing term" and "leaves agencies with flexibility"). EPA has discretion not only in determining when to modify the definition, but also under what circumstances. After consideration of the information currently before EPA, and as discussed in this document, EPA continues to believe that the point of obligation is appropriately placed on refiners and importers of transportation fuel. As expressed in Section II below, EPA believes the current designation of obligated parties is working to achieve the goals of the RFS program.

Additionally, EPA evaluated the impact of a possible change to the definition of "obligated party" on consumers, including potential impacts on fuel prices. As described in more detail below, changing the point of

obligation as proposed by petitioners and other stakeholders would significantly increase the number of obligated parties in the RFS program. Many of these newly obligated parties would be smaller companies or those that do not regularly conduct business in the RIN market, who are likely to be unfamiliar with the requirements of obligated parties under the RFS program. The administrative compliance burden of the RFS obligations would likely be proportionally greater for these smaller companies than current obligated parties (relatively larger refiners and importers of gasoline and diesel) who typically employ engineers, traders, accountants, attorneys, and auditors to demonstrate and verify compliance with the RFS and other regulatory programs. It would also increase EPA's burden in administering and enforcing the RFS program while at the same time opening up new opportunities for additional types of fraudulent behavior in a program that has already seen instances of fraud.

While petitioners generally claim that changing the point of obligation would result in the increased production, distribution, and use of renewable fuels in the United States, petitioners and commenters have failed to provide data that confirms these claims. We continue to believe that changing the point of obligation would at best result in a negligible increase in the production, distribution, and use of renewable fuels in the United States, and would more likely result in a decrease in the production, distribution, and use of these fuels. The EPA is also not persuaded, based on the record before us, by arguments that, under the current regulatory structure, merchant refiners are disadvantaged compared to integrated refiners in terms of their costs of compliance, nor that other stakeholders are receiving windfall profits. The costs of the RFS program are apportioned to all refiners and

importers as a function of their production volume and generally are passed on to consumers. Finally, we believe that changing the point of obligation would do nothing to incentivize the research, development, and commercialization of cellulosic biofuel technologies critical for the growth of the RFS program in future years. Each of these issues is discussed in greater detail below.

A. Relevant Parties in the Fuel Market

Gasoline and diesel fuel are produced at domestic refineries or imported to the United States. There are a wide variety of paths and associated business models by which fuel reaches consumers. Refineries distribute some of the fuel they produce by truck directly from the refinery's loading rack. Refineries generally distribute their remaining production from the "refinery gate" through pipeline, barge, or rail, to distribution terminals. This fuel may be sold by the refinery when it leaves the "refinery gate" or at a location downstream from the refinery on its distribution path. All transportation fuel produced in the United States moves through the "rack."[14] The "rack" refers to the truck loading facility at a distribution terminal or refinery. Generally, wholesale purchasers, marketers or distributors receive fuel at the refinery or terminal rack and distribute that fuel to end users or retailers.[15]

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[14] For fuel imported into the United States, transportation fuel can move through a rack, or is tracked through registration as an "entrant."

[15] The term "fuel marketers" generally refers to parties that sell fuel to distributors or end users at the rack. "Fuel wholesalers" refers to parties that buy fuel in bulk, generally above the rack, and sell this fuel to retail station owners or end users, or distribute the fuel to retail stations they own. Fuel distributers refers to parties that transport fuel from the rack (either at

These parties may purchase fuel upstream of the terminal rack (e.g., directly from the refinery) and handle the logistics of fuel distribution themselves. They may instead purchase fuel at product terminals (either above or below the rack), relying on the refiner or other entity to handle all of the logistics and blending requirements, generally under contract. A "rack seller" is a party who owns fuel immediately before "the rack." The Internal Revenue Service collects excise tax from rack sellers. It defines rack sellers at the refinery rack as "refiners" and rack sellers at the terminal rack as "position holders." For simplicity, we have elected in this document to refer to all parties the IRS considers to be refiners or position holders as "position holders." All subsequent references to "refiners" in this document are to parties that refine petroleum products, whether or not they are rack sellers.

Some refiners are involved in fuel distribution, blending, and/or marketing as well as refining, and these entities are referred to as "integrated refiners." In contrast, "merchant refiners" are those that market a minority of the fuels they refine (and in some cases, do not market any fuel), often selling the fuel to other parties at the refinery gate for distribution and marketing. Most refiners engage in both practices: market a portion of their refined products, and sell fuel to other parties to distribute and market. Choices on which market segments to participate in and to what degree continually evolve over time in the industry, as

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terminals or refineries) to retail stations. Many different parties, including refiners, can operate as marketers, wholesalers, and/or distributers depending on market conditions, and the terms overlap considerably.

profits among the various market segments likewise vary considerably over time.

"Downstream blenders" refers to parties who blend renewable fuel into gasoline or diesel fuel after the fuel has left the refinery. Downstream blending may occur at fuel terminals, bulk storage facilities, and at retail stations; in addition, renewable fuel can be "splash blended" into trucks. Blending of renewable fuel can also occur at the refinery, and this is often referred to as "upstream blending." The term "blender" can also be used to describe parties that combine non-renewable blendstocks downstream of the petroleum refinery to create finished gasoline.

B. Overview of RFS Obligations and Compliance

Each year the EPA calculates and establishes percentage standards for renewable fuel based on the volume targets established in the CAA (which are adjusted by the EPA as appropriate using its waiver authorities), and projections from the Energy Information Administration (EIA) of gasoline and diesel consumption for the coming year. To comply, obligated parties 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 and avoid market disruption, in implementing the statutorily-required credit program, and to assist obligated parties in meeting their individual renewable fuel volume obligations ("RVOs"), the EPA established, through a transparent public rulemaking process, a system for the generation and use of Renewable Identification Numbers ("RINs"). RINs are effectively credits that are generated upon production of qualifying renewable fuel and ultimately used by obligated parties to demonstrate compliance. Renewable fuel producers

and importers generate and assign RINs to the renewable fuel they produce or import, and the RINs specify by a "D-code" 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.[16] The assigned RINs accompany the fuel sold by renewable fuel producers and importers, and can only be separated from the fuel by a subsequent owner of the fuel who is an obligated party or a renewable fuel blender. Once separated, the RINs can be freely traded as a separate commodity from the renewable fuel. Obligated parties accumulate RINs over the course of the year, either by buying renewable fuel with assigned RINs that they separate and retain for compliance, or by buying RINs that others have separated on the open market.

The annual RVOs for a given obligated party are calculated by multiplying the obligated party's total annual production and import of gasoline and diesel fuel by the four annual percent standards.[17] Each

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[16] There are 5 different D-Codes for RINs in the RFS program. D3 RINs can be generated for cellulosic biofuel, which must be produced from cellulosic biomass and achieve a GHG reduction of at least 60%. D4 RINs can be generated for biomass-based diesel (including both biodiesel and renewable diesel) and must achieve a GHG reduction of at least 50%. D5 RINs can be generated for advanced biofuels, which are any renewable fuel (other than ethanol derived from corn starch) that achieves a GHG reduction of at least 50%. D6 RINs can be generated for conventional renewable fuels (primarily corn ethanol) that achieve a GHG reduction of at least 20%, or for fuel within the established annual baseline volume from grandfathered production facilities. D7 RINs can be generated for cellulosic diesel, which is any fuel that meets the requirements for both cellulosic biofuel and biomass-based diesel.

[17] There are separate, but nested, standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and renewable fuel.

obligated party must obtain sufficient RINs of each category to demonstrate compliance with its individual RVOs for the four annual standards. Compliance is accomplished on an annual average basis, through a single annual compliance report to the EPA identifying the RINs acquired and retired for that year's compliance. Thus, compliance under the RFS program requires the obligated parties to understand how to calculate their individual obligations based on the four standards, and then to plan for their annual compliance demonstration through RIN acquisition, through trading or through blending, over the course of the year. There are also associated registration, reporting and recordkeeping requirements.

C. Statutory and Regulatory History of the Point of Obligation

On July 29, 2005, Congress passed the Energy Policy Act of 2005 ("EPAct"), amending the Clean Air Act to create a statutory obligation for the use of renewable fuel in gasoline. The statute envisioned EPA adoption of annual percentage standards designed to increase renewable fuel use over time, and specified that the obligation for compliance with those standards would fall on "refineries, blenders, and importers, as appropriate." PL 109-58 August 8, 2005 and CAA 211(o)(3)(B)(ii)(I).

On September 22, 2006, the EPA published a proposed rule to establish the regulatory framework to implement the RFS program. The EPA proposed that obligated parties responsible for compliance with the annual percentage standards would be parties producing or importing gasoline: i.e., refiners and importers. The EPA specified that those blenders who only added renewable fuel to gasoline would not be obligated

parties.[18] The EPA noted that there were approximately 1,200 ethanol blenders, as compared to 100-200 refiners and importers and stated that making ethanol blenders obligated parties would "greatly expand the number of regulated parties and increase the complexity of the RFS program beyond that which is necessary to carry out the renewable fuels mandate under the Act."[19]

The EPA received comments supportive of the EPA's proposed definition of obligated parties from the Society of Independent Gasoline Marketers of American and the National Association of Convenience Stores (SIGMA/NACS), ExxonMobil, Baker Commodities, Griffin Industries, Methanol Institute (MI), and the American Petroleum Institute (API). The EPA did not receive any comments suggesting a different approach.[20]

On May 1, 2007, the EPA published a final rule establishing the regulatory RFS program. This rule, generally referred to as "RFS1", finalized the proposed def-

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[18] 71 Fed. Reg. 55552, 55573-4. Blenders who produce gasoline through combining blendstocks are considered refiners under EPA regulations and would therefore be obligated parties.

[19] Ibid at 55573.

[20] SIGMA/NACS commented that in the final rule the EPA should clearly distinguish between "blenders" and "oxygenate blenders" to avoid confusion or misinterpretation as to which parties have renewable volume obligations, and also urged the EPA to clarify that a party blending biodiesel into diesel fuel would not be considered a "blender" which has an RVO. In response to this comment, EPA pointed to its regulations which clearly only placed the obligation on refiners and importers that produce or import gasoline, including the limited subset of blenders who blend petroleum (i.e. non-renewable) blendstocks into finished gasoline. Regulation of Fuel and Fuel Additives: Renewable Fuel Standard Program Summary and Analysis of Comments. EPA420-R-07-006, 2-13—2-14.

inition of "obligated party" as refiners and importers of gasoline.[21] The program was expanded to apply to diesel fuel and otherwise significantly modified in 2007 through the Energy Independence and Security Act ("EISA"), Notably, Congress did not alter the provision specifying that compliance with the RFS percentage standards would be the responsibility of "refineries, blenders and importers, as appropriate." In enacting EISA, Congress stated that the goals of the statute include moving the United States toward "greater energy independence and security," and increasing "production of clean renewable fuels."[22] The amended statute established greenhouse gas emission reduction requirements for qualifying renewable fuels, and increasing annual renewable fuel volume targets to be achieved through application of annual percentage standards for four categories of renewable fuel by the EPA that also take into account the expected consumption of gasoline and diesel fuel. As was the case with EPAct, the amended statute required the EPA to establish a regulatory program, and specified that the program must include a number of program flexibilities, including a credit program for those who overcomply with the annual standards. The statute also specifically required a temporary exemption for small refineries (through 2010) that could be extended by the EPA either based on the results of a Department of Energy (DOE) study on impacts of the program on small refineries to be completed by December 31, 2008, or on a case-by-case basis upon demonstration by a small refinery of disproportionate economic hardship.

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[21] 72 Fed. Reg. 23900.

[22] Energy Independence and Security Act of 2007, PL 110-140, December 19, 2007.

On May 26, 2009, the EPA proposed amendments to the RFS program regulations to reflect the significant statutory changes enacted as part of EISA.[23] The EPA proposed to retain the same approach to the RFS point of obligation as had been used in RFS1, but to expand it to include diesel producers and importers as obligated parties, consistent with EISA's addition of diesel fuel as an obligated fuel. The EPA also solicited comment on two possible alternatives: (1) making blenders who add oxygenate to RBOB and CBOB obligated parties with respect to those fuels rather than the refiners and importers of RBOB and CBOB,[24] and (2) moving the point of obligation for all gasoline and diesel to parties who supply finished transportation fuels to retail outlets or wholesale purchaser-consumer facilities. In raising these issues for public comment, the EPA noted that the approach adopted under RFS1 was based on an expectation that there would be an excess of RINs at low cost, and that they would be freely traded between parties needing them such that obligated parties would have ample opportunity to acquire them. The EPA also explained that in adopting the approach under RFS1, the EPA had found that the designation of ethanol blenders as obligated parties would have greatly expanded the number of regulated parties and increased the complexity of the program beyond that which was necessary to carry out the fuels mandate required by the program. The EPA questioned whether, with the expanded mandates required

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[23] 74 Fed. Reg. 24904.

[24] Conventional blendstock for oxygenate blending (CBOB) and reformulated blendstock for oxygenate blending (RBOB) are produced by refineries and can be blended with 10% ethanol to produced finished conventional and reformulated gasoline respectively.

under EISA, parties with excess RINs would tend to retain them for future compliance rather than sell them freely, and also hypothesized that most or all blenders would be regulated as RIN holders under the new program and questioned whether also making them responsible for compliance with the percentage standards could involve only a small additional burden. The EPA indicated that under the expanded program, there might be disparities in the ability of various obligated parties to acquire RINs. As a result of these considerations, and in light of the more complicated obligations required under RFS2, although proposing to retain the definition of obligated party (refiners and importers) from RFS1, the EPA also solicited comment on whether a change in that definition might be appropriate, and would more evenly align a party's access to RINs with that party's obligations under the RFS2 program.[25]

On March 26, 2010, the EPA issued a final rule establishing the amended RFS program structure reflecting the EISA amendments.[26] The EPA summarized the comments it had received on the point of obligation issue, noting that some refiners favored a change from the proposed approach of retaining the obligation on refiners and importers, while others did not. In contrast to the RFS1 proposal, EPA received many differing comments from interested stakeholders on this issue. Several parties suggested that blenders or other downstream parties should become obligated parties because they control blending and that without such a change refiners and importers would find it difficult to acquire RINs. Still others sug-

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[25] 74 Fed. Reg. 24904, 24963.

[26] 75 Fed. Reg. 14670.

gested that the obligation should be placed on parties who supply finished transportation fuels. Downstream blenders and other downstream parties, as well as renewable fuel producers and some members of the petroleum industry, generally opposed a change, citing the burden such a change would pose to small businesses, and the added unnecessary complexity it would add to the RFS program. The EPA concluded that the concerns expressed in the NPRM and in comments suggesting a change in the definition of obligated party, did not, on balance, warrant a change, stating:

> We continue to believe that the market will provide opportunities for parties who are in need of RINs to acquire them from parties who have excess. Refiners who market considerably less gasoline or diesel than they produce can establish contracts with splash blenders to purchase RINs. Such refiners can also purchase ethanol from producers directly, separate the RINs and then sell the ethanol without RINs to blenders. Since the RFS program is based upon ownership of RINs rather than custody of volume, refiners need never take custody of the ethanol in order to separate RINs from volumes that they own. Moreover, a change in the designation of obligated parties would result in a significant change in the number of obligated parties and the movement of RINs, changes that could disrupt the operation of the RFS program during the transition from RFS1 to RFS2.[27]

Nevertheless, because concerns over the liquidity of the RIN market still existed at the time, the EPA also

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[27] 75 Fed. Reg. 14670

stated that "[w]e will continue to evaluate the functionality of the RIN market [and] [s]hould we determine that the RIN market is not operating as intended, driving up prices for obligated parties and fuel prices for consumers, we will consider revisiting this provision in future regulatory efforts."[28]

The EPA promulgated 40 CFR 80.1406 stating that "[a]n obligated party is any refiner that produces gasoline or diesel fuel within the 48 contiguous states or Hawaii, or any importer that imports gasoline or diesel fuel into the 48 contiguous states or Hawaii during a compliance period."

As mentioned above, in requesting that the EPA reconsider the point of obligation for the RFS program, petitioners claim that the justifications given by the EPA in the final 2007 and 2010 rules that placed the point of obligation on the refiners and importers of gasoline and diesel are no longer valid. After providing notice and opportunity for comment, and after careful review and consideration of the comments received, we disagree that a change to the RFS point of obligation is warranted, for the reasons described below.[29]

In establishing the RFS program, Congress put in place a policy to effect a substantial transformation in

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[28] Ibid.

[29] Valero, in comment, suggested that EPA set an improper burden for petitioners in evaluating the petitions. They stated that they provided sufficient robust evidence to justify a change in the point of obligation. Valero specifically cited to work completed by NERA, SMU, Ron Minsk, Doug Parker, Commander Kirk Lippold, Charles River Associates, and Joe Jobe. EPA has evaluated these analyses and has concluded that they do not provide sufficient justification for a change in the point of obligation. An analysis of each of these reports is presented below in the following sections: II.B., II.C., II.E., II.H., III.B, III.C, III. D, III.G.

the fuels market; stakeholders on all sides have strongly held views on whether and how that transformation should occur. However, nearly all stakeholders have communicated to the EPA about the desire for greater certainty and stability in the RFS program. As discussed further below, the EPA believes that a change in the point of obligation would be a substantial disruption that has the potential to undermine the success of the RFS program simply as a result of increasing instability and uncertainty in programmatic obligations.

Several commenters referenced the statutory directive that the EPA "ensure that transportation fuel . . . contains at least the applicable volume" of renewable fuel as evidence that EPA should modify the obligation if it is "hindering growth." As discussed below in Section II., Petitioners only provided theoretical arguments that when evaluated provide no firm basis to conclude that a change in the point of obligation would lead to increased volumes of renewable fuel. In contrast, we continue to believe that the disruption to the program by changing the point of obligation would actually reduce renewable fuel volumes and that long term positive impacts, if any, would be negligible. This belief is supported in part by the fact that the shortfall at this point is exclusively in cellulosic biofuels, and a change to the point of obligation is unlikely to impact cellulosic biofuel production. For this reason, and as further discussed below, we do not believe that a change in the point of obligation would have the positive effect suggested by Commenters, and we do not believe that the current point of obligation is "hindering growth."

The CAA dictates that the point of obligation should be placed on refineries, importers, or blenders as

appropriate. EPA has considered the petitions and comments submitted and finds, for the reasons stated herein, that refiners and importers remain the appropriate parties.

II. The Current Program Structure Appears to Be Working to Achieve the Goals of the RFS Program

Petitioners and some commenters discuss several perceived shortcomings of the RFS program. The petitioners generally attribute these shortcomings, in whole or in part, to the EPA's decision to place the point of obligation on the refiners and importers of gasoline and diesel fuel, rather than parties downstream of the refiners and importers. These claimed shortcomings include, among others, the failure of the RFS program to achieve the statutory volumes of renewable fuel (requiring the use of EPA's waiver authorities) and higher than anticipated RIN prices leading to higher fuel prices for consumers, negative impacts on merchant refiners, and windfall profits for unobligated blenders of renewable fuel. The petitioners conclude that the RIN market, and by extension the RFS program, is not operating as intended, and therefore the EPA should re-visit the point of obligation in the RFS program.

After reviewing the information submitted by the petitioners and commenters, along with additional information gathered by the EPA, we disagree with a number of the assertions and arguments put forward by the petitioners, and do not agree with their policy arguments that changing the point of obligation would enhance the effectiveness of the RFS program to achieve Congress's goals. Evidence suggests that despite the necessary use of EPA's waiver authorities in recent years, the RIN market, and the RFS program

as a whole, are generally working to increase supplies of renewable fuel, albeit at a pace slower than Congress envisioned, and that a change in the point of obligation is not likely to enhance the achievement of the program's goals. The RFS program is providing a significant incentive for the continued growth in the production, distribution, and use of renewable fuels in the transportation fuel market in the United States, and changing the point of obligation would not enhance that incentive. With the exception of cellulosic biofuels, renewable fuel production and use in the United States have increased significantly, and are projected to meet or exceed the statutory volumes for non-cellulosic biofuels in 2017. RIN prices themselves have not resulted in appreciably higher transportation fuel prices for consumers or disproportionate harm for merchant refiners.[30] Finally, the record does not support claims that merchant refiners have resorted to the extreme measures suggested by the petitioners, such as decreasing fuel production or exporting the fuel they produce,[31] in an effort to minimize their RFS

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[30] While RIN prices are expected to impact the price of fuels with relatively greater or lesser renewable content (increasing the price of fuels with low renewable content such as E0 or B0 and decreasing the price of fuels with high renewable content such as E85 or B20), on balance they are not expected to increase the total cost of fuel to consumers.

[31] While gasoline and diesel exports have increased in recent years we believe that these increases are attributable to favorable crude oil and natural gas prices in the United States relative to the rest of the world, rather than an effort to avoid RIN costs. To date EPA has not been provided with evidence that demonstrates that merchant refiners favorably situated to export fuel from the U.S. have increased exports as a result of any burden associated with the RFS program. We note that despite these higher export volumes, the supply of gasoline and diesel to the United States has not changed (see Section II.D below).

obligations. RINs are currently available to meet compliance needs, and we see no reason to indicate that this dynamic will change in the future.[32]

A. RINs are Providing an Incentive for Increasing Renewable Fuel Production, Distribution, and Use

Since the adoption of the current RFS regulations in 2010, the RFS program has provided a significant incentive for growth in the production, distribution, and use of renewable transportation fuels in the United States. While some commenters cited EPA's use of the cellulosic and inadequate domestic supply waiver authorities to reduce the required volumes of renewable fuel in 2014-2016, as well as our May 31, 2016 proposal to use similar authorities with respect to establishing the renewable fuel standards for 2017, as evidence that the RFS program is not working effectively to achieve its stated goals, we believe that the RFS program has been generally successful at achieving these goals. First, EPA did not rely on the general waiver authority under a finding of inadequate domestic supply in the final 2017 rule, meaning that all reductions in the final rule use only the cellulosic waiver authority in 211(o)(7)(D) and are attributable to a shortfall in cellulosic biofuel produc-

[32] Based on the compliance information submitted by obligated parties for the 2016 compliance year, EPA calculated that there were over 2 billion 2016 RINs available for use in 2017 (see *Carryover RIN Bank Calculations for 2018 NPRM*). Such carryover RINs are available to obligated parties for compliance purposes, effectively supplementing the volume of RINs associated with renewable fuel production during the compliance year.

tion.[33] EPA has proposed a similar approach with respect to the 2018 RFS standards.[34] As discussed in more detail in Section III below, we do not believe that changing the point of obligation would result in an increase in the production, distribution, or use of renewable fuels beyond what is already happening based on current market incentives. Based on data collected through the EPA Moderated Transaction System (EMTS),[35] the production and import of renewable transportation fuel in the United States has increased from approximately 7 billion ethanol-equivalent gallons in 2010 to approximately 18.6 billion ethanol-equivalent gallons in 2016, the most recent year for which complete data are available. This represents an increase of over 165% in just six years. Importantly, EPA found no basis for reductions to the advanced and total renewable fuel requirements in 2017 beyond the reductions made under the cellulosic waiver authority due to the projected shortfall in cellulosic biofuel production relative to the statutory volume for 2017. While there are many factors that have contributed to the growth of renewable transportation fuel production and imports in the United States in recent years, including federal and state tax credits for certain types of renewable fuels and federal grants and loan guarantees for advanced biofuel production

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[33] Renewable Fuel Standard Program: Standards for 2017 and Biomass-Based Diesel Volume for 2018. 81 FR 8946 (December 12, 2016).

[34] Proposed Rule: Renewable Fuel Standard Program: Standards for 2018 and Biomass-Based Diesel Volume for 2019. 82 FR 34206 (July 21, 2017).

[35] RIN generation data are available publicly at https://www.epa.gov/fuels-registration-reporting-and-compliance-help/public-data-renewable-fuel-standard.

facilities, many stakeholders have regularly cited the RFS program as a primary reason for making investments in both the production and distribution of renewable fuels.[36]

Despite these successes, in recent years the EPA has exercised the statutory waiver authorities to reduce the renewable fuel volumes from those specified in the statute, largely due to the shortfall in cellulosic biofuel production.[37] While the EPA relied on the use of the general waiver authority in 2014-2016, reductions in the 2017 final rule and proposed 2018 rule were made using only the cellulosic waiver authority. Reductions using the cellulosic waiver authority in 2017, and those proposed for 2018, can be attributed to lower production of cellulosic biofuels than envisioned by Congress resulting from challenges experienced with the development and commercialization of cellulosic biofuel production technologies. The projected production and use of non-cellulosic renewable transportation fuels in 2017 and again in 2018 meets or exceeds the volume envisioned by Congress in EISA.[38] Simi-

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[36] For example, see comments on the proposed RFS standards for 2017 from the National Biodiesel Board, EPA-HQ-OAR-2016-0004-2904; and Dana Gustafson of Marquis Energy, EPA-HQ-OAR-2016-0004-3498; and a Letter from RaceTrac to Administrator McCarthy, received August 17, 2016.

[37] For a full discussion of EPA's waiver authorities see the preamble to the Final Rule establishing the 2014-2016 RFS standards (80 FR 77420, Dec. 14, 2015).

[38] The statutory volumes for total renewable fuel, advanced biofuel, and cellulosic biofuel in 2017 are 26.0, 11.0, and 7 billion gallons respectively. Therefore, the implied statutory targets for conventional biofuel (the difference between the required volumes of total renewable fuel and advanced biofuel) and non-cellulosic advanced biofuels (the difference between the statutory volumes of advanced biofuel and cellulosic biofuel) are 15.0 billion

larly, required biodiesel volumes for 2017 are 100% greater than the statutory prescribed minimum volume, and for 2018 the required volume is 110% greater than the statutory minimum.[39] The petitioners generally focused on the limitations to the distribution and use of renewable fuels, claiming that changing the point of obligation would address these limitations and allow for greater volumes of renewable fuels to be used. We note, however, that these issues were not the basis for reducing the RFS standards in 2017, nor for the proposed reductions in 2018. In the rule establishing the renewable volume obligations for 2017, and again in our proposed rule for 2018, the EPA determined that the supply of conventional biofuel is sufficient to meet the implied statutory target of 15 billion gallons. We also found that the supply of non-cellulosic advanced biofuels was sufficient to meet or exceed the implied statutory requirements for these fuels.[40] As discussed further below, the primary factor limiting the production of cellulosic biofuels, including cellulosic ethanol, is the slower than expected development and commercialization of technologies that can reliably and economically produce these fuels.

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gallons and 4 billion gallons respectively. The volumes proposed by EPA in our July 2017 proposed rule for 2018 for total renewable fuel, advanced biofuel, and cellulosic biofuel are 19.24, 4.24 and 0.238 billion gallons respectively, with an implied volume of 15.0 billion gallons of conventional biofuel and 4 billion gallons of non-cellulosic advanced biofuel.

[39] Compare CAA 211(o)(2)(B)(v) (1 billion gallon minimum) with the required volumes of 2.0 and 2.1 billion gallons of biomass-based diesel in 2017 and proposed in 2018 respectively.

[40] EPA calculates the implied statutory target for non-cellulosic advanced biofuels by subtracting the statutory volume for cellulosic biofuel from the statutory volume for advanced biofuels for each year.

Some commenters suggested that changing the point of obligation would provide benefits to the cellulosic biofuels industry, whereas other comments agreed with EPA's proposed assessment that changing the point of obligation would not positively impact the cellulosic biofuel industry.

These comments are discussed in more detail in Section III.F below. However, overall the EPA does not find the arguments for moving the point of obligation in an effort to support the cellulosic biofuel industry convincing. The proposed cellulosic biofuel volume for 2018 is just 3.4% of the statutory volume (i.e., 238 million ethanol-equivalent gallons expected production compared to a statutory volume of 7 billion gallons). Furthermore, the vast majority of the cellulosic biofuel currently produced is biogas rather than liquid cellulosic biofuels. The RFS program, operating under the existing regulations, has been demonstrably effective at making significant progress towards achieving the statutory goals, and in some cases exceeding these goals. The challenges to further growth in the commercial scale production of cellulosic biofuels and the infrastructure necessary to facilitate additional biofuel use, particularly liquid cellulosic biofuels, are not related to the point of obligation under the RFS program, but rather are the result of research, development, and production challenges described in detail in the final rules establishing the standards for 2014-2017 and in the proposed rule to establish standards for 2018.[41] Beyond 2018, 90% of the growth in the statutory RFS volumes is intended to be cellulosic biofuel, with the remainder of the growth coming from non-cellulosic advanced biofuels.

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[41] 80 FR 77420 (Dec., 14, 2015), 81 FR 89746 (December 12, 2016) and 82 FR 34206 (July 21, 2017).

Because the statutory design of the RFS program provides limited incentives to obligated parties to invest in the development of cellulosic biofuels (since the statute requires that the cellulosic biofuel volume be set equal to the volume projected to be produced in any given year if this volume is lower than the statutory volume, and also allows the use of cellulosic waiver credits rather than RINs in years with such a reduction), it is unlikely that changing the point of obligation as requested by the petitioners would result in increased investment in cellulosic biofuels by the obligated parties under their proposals. As discussed further in Section III.F, and based on evidence presented by petitioners, and the information before the agency at this time, changing the point of obligation of the RFS program is unlikely to address the significant challenges associated with the commercialization of cellulosic biofuel, as these challenges are associated with the economic production of cellulosic biofuels at commercial scale rather than the distribution and use of cellulosic biofuels, and would not be expected to benefit the production, distribution, and use of non-cellulosic transportation fuel in the United States, as detailed further below.[42]

B. Current RIN Prices Are Not Indicative of a Dysfunctional RIN Market

One of the issues cited by the petitioners as evidence that the RIN market, and more generally the existing RFS regulations, are not operating as intended is the

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[42] As discussed in more detail in Section III.C below, changing the point of obligation is also not expected to significantly impact the market dynamics currently limiting the distribution and use of E85.

current price of RINs, which some petitioners have characterized as being indicative of a dysfunctional RIN market.[43] As discussed in a memorandum prepared in support of the proposed RFS annual standards for 2014-2016, the EPA does not believe that the D6 RIN prices[44] observed in recent years are indicative of a dysfunctional RIN market.[45] Rather, there are structural reasons why D6 RIN prices increased. In 2013 the required volumes under EPA's RFS standards exceeded levels that could met via the relatively simple blending of 10% ethanol into gasoline (in addition to the blending of other biofuels such as biodiesel). Increased demand for RINs (due to higher standards),

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[43] Some commenters suggested that when described in RFS1 and RFS2, RINs were a compliance mechanism only, and not described as a means to effect change in the marketplace. EPA notes that while RINs were designed to provide flexibilities, as the costs associated with increasing renewable fuels in the marketplace has increased, it is logical for RIN prices to increase as well. While at the time the RIN system was created, and the standards were essentially non-binding, RINs played solely a compliance role, but that naturally changed as the standards became more difficult to meet.

[44] Renewable fuel producers generate different types of RINs, depending on a number of factors including the feedstocks and production processes they use to produce renewable fuels, the type of fuel they produce, and the GHG reductions for these fuels relative to the gasoline and diesel fuel they replace. D6 RINs are generated for conventional biofuel, the vast majority of which is corn ethanol, with some additional D6 RINs being generated for biodiesel from grandfathered facilities and other fuels. Prior to 2013, D6 RIN prices were generally less than 5 cents per RIN. D6 RIN prices rose significantly in 2013, and have remained higher than the prices observed prior to 2013.

[45] See "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effect," Dallas Burkholder, Office of Transportation and Air Quality, US EPA, May 14, 2015, and Letter from API to EPA Administrator McCarthy, August 18, 2016.

and the comparative difficulty of increasing the supply of RINs through the blending of ethanol at levels *beyond* 10% (or alternatively the purchase of more expensive non-ethanol renewable fuels) drove D6 RIN prices higher. Rather than reflecting a dysfunctional RIN market, higher RIN prices simply reflect the increasing cost of supplying additional renewable fuels to the marketplace through higher level ethanol blends and/or non-ethanol renewable fuels along with the increasing demand for RINs that results from higher RFS standards.[46] In other words, higher RIN prices reflect the greater degree of difficulty (and cost) of getting ever-greater volumes of renewable fuel into the transportation fuel pool – the explicit goal or the RFS program.[47]

EPA does not believe that changing the point of obligation would significantly impact the economics of selling E85 or non-ethanol renewable fuels, nor would it significantly impact the supply of available RINs (for reasons discussed below). We therefore do not believe that changing the point of obligation would be likely to result in lower D6 RIN prices than would be expected to occur with the existing point of obligation, nor would such a change result in D6 RIN prices

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[46] Uncertainty, whether related to the level of the RFS standards for any given year or the RFS program as a whole, can further serve to increase the volatility of RIN prices in the market. Some volatility may be inevitable, but increased volatility could be one outcome of changing the point of obligation.

[47] We note that RIN prices are influenced by a variety of factors, including underlying commodity market prices such as corn, ethanol, oil, and gasoline prices. Another factor influencing their price, as described, is the level of the standard and the ease with which higher-level ethanol blends can be produced and used in the market.

comparable to those observed in 2012 or earlier. The price of RINs will continue to vary in the marketplace in response to a variety of factors.

Several commenters disputed the EPA's statement in the proposed denial of petitions seeking a change in the RFS point of obligation that the observed RIN prices were not indicative of a dysfunctional RIN market. For example, one petitioner submitted a paper alleging significant friction in the RIN market related to the current point of obligation.[48] This paper cites several factors they claim are the sources of high friction in the RIN market: high RIN transaction costs (indicated by high bid-ask spreads), high RIN price volatility (which may be a sign of an illiquid market), poor availability of information on RIN prices, differing levels of access to renewable fuels and/or markets for renewable fuel blends among obligated parties, and the potential for RIN market manipulation.

After reviewing this paper, the EPA has concluded that a number of the claims made by the authors are not well supported by the data presented, while other issues highlighted by the authors would be unlikely to be significantly impacted by a change in the point of obligation. The authors present no data to support their argument that RIN transaction costs are high, nor do they present a compelling argument as to why changing the point of obligation would be expected to lower transaction costs. Instead, the commenter simply suggests that the historical volatility of RIN prices is evidence of the high transaction costs and the

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[48] Charles River Associates *RINs Market Frictions and the RFS Point of Obligation*, February 2017.

relative thinness of the RIN markets.[49] While the EPA does not have access to data on RIN transaction costs we have no reason to suspect that they are unreasonably high. Data published by EPA on our public website refutes the suggestion that there is thinness in the RIN market. For the 2014 compliance year, the most recent year for which RIN trade data are publicly available, there were over 50 billion RIN transactions.[50] We believe that the price volatility observed in the RIN market is the result of a number of factors including volatility in underlying commodity pricing, the statutory design of the RFS program, which requires RVOs to be adjusted annually, uncertainty related to legal challenges to the annual volume obligations, and the challenges associated with increasing the consumption of renewable fuel volumes beyond the E10 blendwall. The EPA also disputes that there is poor availability of information on RIN pricing. The EPA is aware of at least two subscription services (Oil Price Information Service and Argus) and one free price report (Progressive Fuels Limited) that report daily RIN price information, including the bid/ask prices and in the case of Argus the RIN trade volumes. Other issues raised in this report, such as the relative inelasticity of the supply of RINs due to the very small markets for E15 and E85, the contractual relationship between refiners and branded stations, and the lack of availability of RIN holding and trade information due to CBI constraints are not expected to

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[49] A thin market is one in which the trading volume is relatively low and/or there are a relatively low number of buyers and sellers.

[50] See Annual RIN Sales/Holdings Summary on EPA public website: https://www.epa.gov/fuels-registration-reporting-and-compliance-help/annual-rin-salesholdings-summary.

be impacted by a change in the point of obligation in the RFS program.[51]

One petitioner also implies that higher RIN prices lead to higher fuel prices for consumers.[52] When D6 RIN prices first rose substantially in 2013, attention turned to whether and how such RIN price increases affect consumer fuel prices. The EPA assessed this issue using available data and concluded that while increasing RFS standards may increase transportation fuel prices if renewable fuels are more expensive than the petroleum fuels they replace on an energy-equivalent basis, *RIN prices themselves* were not expected to have a significant impact on retail fuel prices.[53] External, non-EPA assessments similarly concluded that increased RIN prices had not had a significant impact on retail gasoline (E10) prices.[54]

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[51] See Section III.B – III.D for a further discussion of the anticipated impacts of changing the point of obligation on the sales of renewable fuels and renewable fuel blends. The contractual relationships between the refiners and retail stations, which can include fuel purchase restrictions, sales volume requirements, requirements on the number of grades of gasoline which must be offered, etc. predate the RFS requirements and are therefore unlikely to change substantively if the point of obligation is changed. Finally, RIN holding and trade information is generally claimed as confidential business information (CBI), and this would likely be the case regardless of whether the obligated parties are refiners and importers or if they are "position holders" or blenders.

[52] Valero Petition for Rulemaking, June 13, 2016. Page 18.

[53] "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effect," Dallas Burkholder, Office of Transportation and Air Quality, US EPA. May 14, 2015.

[54] Knittel, Christopher R., Ben S. Meiselman, and James H. Stock. The Passthrough of RIN Prices to Wholesale and Retail Fuels Under the Renewable Fuel Standard. Working Paper

When RIN prices rise, the market price of the petroleum blendstocks produced by refineries also rise to cover the increased RIN costs, in much the same way as they would rise in response to higher crude oil prices. The effective price of renewable fuels (the price of the renewable fuel with attached RIN minus the RIN price), however, *decreases* as RIN prices increase. When renewable fuels are blended into petroleum fuels these two price impacts generally offset one another for fuel blends such as E10 with a renewable content approximately equal to the required renewable fuel percentage standard. Higher RIN prices also generally result in higher prices for fuels with lower renewable content (such as E0 or petroleum diesel) and lower prices for fuels with higher renewable content (such as E85 or B20). The cost of the RIN therefore serves as a cross-subsidy, reducing the price of renewable fuels and increasing the price of petroleum based fuels in transportation fuel blends, thus incentivizing increased blending of renewable fuels into the transportation fuel pool. In this way the RINs also help provide a price signal to consumers to help achieve the Congressional goals of greater renewable fuel production and use. Fuels with higher renewable content are relatively cheaper to consumers than they would be absent high RIN prices, while fuels with lower renewable content are relatively more expensive when RIN prices are high.[55]

21343. NBER Working Paper Series. Available online <http://www.nber.org/papers/w21343.pdf>.

[55] Even when RIN prices are relatively high fuels with high renewable content may not be cheaper than fuels with lower renewable content on an energy-equivalent basis. For example, despite relatively higher RIN prices since 2013, the national average price discount for E85 relative to E10 has never reached or exceeded 22% (the price discount needed for achieve parity

The higher the RIN prices are, the more significant the potential price discounts for fuels with higher renewable content. This retail price discount for fuels with a relatively high renewable content is enabled by higher prices for fuel blends with little or no renewable fuel content.

C. The Current Regulations do not Appear to Disproportionately Impact Merchant Refiners or Provide Windfall Profits for Unobligated Blenders

In requesting that the EPA change the point of obligation petitioners claim that the current point of obligation negatively impacts refiners that do not blend renewable fuels and/or do not sell fuel at the rack. They generally claim that this negative impact is due to these refiners incurring a high cost for RINs purchased to comply with their RFS obligations. They contrast this with what they say is the situation facing integrated refiners, whom they state are acquiring RINs for free by blending renewable fuels. Petitioners also argue that unobligated fuel blenders (such as large retail fuel chains or fuel distributers and refiners that market more fuel at the rack than they refine or import) are selling excess RINs and generating windfall profits. Several other parties have submitted documents to the EPA disputing these claims.[56]

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between E85 and E10 on an energy equivalent basis). See also "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effects," Dallas Burkholder, Office of Transportation and Air Quality, U.S. EPA, May 2015. and "An Assessment of the Impact of RIN Prices on the Retail Price of E85," Dallas Burkholder, Office of Transportation and Air Quality, U.S. EPA, November 2015.

[56] See Letter from RaceTrac to Administrator McCarthy, August 17, 2016; Letter from QuikTrip to Administrator McCarthy,

We have assessed the data available on this issue and believe that the data do not support the petitioners' arguments. We believe that merchant refiners are generally not uniquely adversely impacted (relative to integrated refiners). Our reasons for not believing that merchant refiners are uniquely impacted by the RFS program are summarized below.[57]

To understand why this is the case, we must consider the fundamental argument about cost disparities that petitioners and merchant refiners present to the EPA. Several merchant refiners argue that due to their position in the market as refiners with little or no blending and/or sales of fuel at the rack, their sole RFS compliance option is to purchase unattached RINs (that is, RINs that have already been separated from renewable fuel). Merchant refiners typically purchase these RINs on the market and retire them for compliance purposes; a large merchant refiner can spend considerable sums to purchase these RINs, and they typically point to these sums as an expenditure that represents a net cost to the company.[58] Some merchant refiners then argue that their integrated refiner competitors, by contrast, do not face such costs, arguing that integrated refiners acquire RINs "for free" when they purchase renewable fuel with an attached RIN. They argue that this

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August 17, 2016; Presentation from Murphy USA to EPA, August 16, 2016.

[57] For further detail see "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effect," Dallas Burkholder, Office of Transportation and Air Quality, US EPA. May 14, 2015.

[58] For example, see comments from CVR Energy on the 2017 RFS standards proposed rule, EPA-HQ-OAR-2016-0004-0213.

dynamic results in a fundamental inequity between two types of RFS obligated parties: those that pay large sums to acquire RINs on the open market, and those that obtain RINs "for free." Moving the point of obligation, petitioners argue, would help address this inequity. To understand why this argument is flawed, it is helpful to examine the underlying market dynamics in more detail.

It is indeed the case that for the RVO associated with the production volumes they do not market, merchant refiners generally acquire the RINs necessary for compliance with their RFS obligations by purchasing separated RINs, rather than purchasing renewable fuel with assigned RINs. Because of this, merchant refiners are therefore able to directly track the costs associated with acquiring the RINs they need for compliance and cite these costs in their financial and accounting statements. When RIN prices are relatively high these apparent costs can be significant, especially for merchant refiners that refine large volumes of obligated fuels.

Less obviously apparent, however, is *the impact of the RFS program on the market price for the petroleum blendstocks that merchant refiners sell*. In addition, as discussed further below, all refiners and importers of gasoline and diesel fuel destined for the domestic market incur costs to comply with RFS obligations. This is true whether the refiners and importers acquire RINs by blending renewable fuels (in which case they realize a cost when they sell blended fuels for a lower price than the weighted average of the petroleum blendstocks and renewable fuels that comprise the blended fuel) or purchasing separated

RINs – meaning no fundamental inequity exists.[59] Moreover, because all refiners and importers have RFS obligations in proportion to the fuels they produce or import, they all have similar per gallon costs of compliance related to the RFS program, and they all seek to recover those costs through the pricing of their products, whether that product is blended with renewable fuel and sold at a terminal or is unblended petroleum blendstocks sold at the refinery gate. Stated another way: merchant refiners can indeed expend significant funds to purchase RINs needed to demonstrate compliance with the RFS program, but the cost is offset by a corresponding increase in the market price of the fuel they sell that is attributable to the RFS obligations. The market price they receive for the gasoline and diesel fuel they sell reflects the cost of RINs. While high RIN prices increase the market price of petroleum blendstocks, they generally do not increase the market price of fuels blended with renewable fuels, as the blenders use the value of the RIN to reduce the price of the blended fuels. The same dynamic applies to all gasoline blendstocks and diesel fuel produced by both merchant and integrated refiners alike. Further, many merchant refiners blend a portion of the gasoline and diesel they produce with renewable fuels and directly market this fuel (while selling the majority to other parties for marketing), while many integrated refiners sell a portion of the gasoline and diesel they produce as unblended blendstocks to other fuel marketers. There are not two prices in the market for petroleum fuels based on whether or not they are intended to be marketed

[59] The issue of whether or not integrated refiners and other unobligated blenders acquire RINs "for free" or at a reduced cost is addressed more fully later in this section.

directly to consumers or sold to a downstream marketer, but rather separate prices for petroleum blendstocks and blended fuels.

The EPA also examined the available data to assess whether or not obligated parties that acquire RINs by purchasing separated RINs, rather than blending renewable fuels, are able to recover the cost of these RINs in the price of the petroleum blendstocks they sell. In their petition, Valero acknowledges this ability for refiners to recover the cost of acquiring RINs through higher prices for gasoline and diesel they produce than would be the case with lower RIN prices.[60] Empirical data also support this argument. Data clearly show higher market prices for RFS-obligated fuels (gasoline and diesel blendstocks sold for use in the United States) when compared to those of unobligated fuels that are very similar (such as gasoline and diesel sold for export, or heating oil and jet fuel).[61] Before accounting for any potential RIN price impacts, one would expect obligated and unobligated fuels to have very similar market prices because of their very similar fuel properties. Gasoline is nearly identical whether used domestically or sold for export, and heating oil and diesel are also very similar chemically. However, in recent years, as RIN prices have become elevated, data show a gap opening up between the price of domestic gasoline and exported gasoline, and between the price of diesel and heating oil. The price of the obligated fuels is higher and the gap corresponds, for the most part, with RIN

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[60] Valero Petition for Rulemaking, June 13, 2016. Page 18.

[61] See "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effect," Dallas Burkholder, Office of Transportation and Air Quality, US EPA. May 14, 2015 and Letter from QuikTrip to Administrator McCarthy, August 17, 2016.

prices. Obligated parties – whether they are merchant refiners or integrated – are charging more for domestic gasoline and diesel to ensure they recoup the costs associated with RIN prices. So while a merchant refiner is directly paying for the RINs they buy on the market, they are passing that cost along in the form of higher wholesale gasoline and diesel prices.

Several commenters submitted assessments of the fuels market disputing the EPA's claim that merchant refiners were generally able to recover the cost of RINs through the higher prices for the products they sell. Some of these studies referred to this as an inability to "pass-through" the cost of the RFS program to consumers. After careful review of the information submitted, the EPA does not find these assessments convincing. All obligated parties, including merchant refiners, are generally able to recover the cost of the RINs they need for compliance with the RFS obligations through the cost of the gasoline and diesel fuel they produce.

Some of these assessments submitted or referenced in comments simply assumed that RIN costs were not recovered by merchant refiners and/or were not experienced by integrated refiners or other parties that acquire RINs by blending.[62] As discussed above,

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[62] See, for example, Baker & O'Brien *Impact of RINs on Merchant and Integrated Refiners*, October 28, 2016 and comments by CVR Energy (EPA-HQ-OAR-2016-0544-0396). We also note that the calculations cited by CVR.Energy in the DOE Study at B-5 not only simply assume that refiners that purchase separated RINs do not recover the cost of the RINs, but also erroneously assume that refiners that blend ethanol into gasoline retail the full value of VEETC tax credit, which expired at the end of 2011. The value of this tax credit is responsible for the majority of the

these assumptions are unfounded, as they ignore the complexities of the fuels market and the various ways costs are recovered and/or experienced as a result of the RFS obligations. Other assessments attempt to examine blender margins as a means of determining whether or not the cost of RINs are recovered by merchant refiners, or alternatively if the value of the RINs are passed on to consumers or withheld by blenders.[63] While examining correlations between RIN prices and estimated blender margins may provide some level of indication about the ability for the blenders to withhold some portion of the RIN value, we do not believe these assessments can be used to draw definitive conclusions on the degree of RIN passthrough in the marketplace, as there are many other factors that impact blender margins other than RIN prices that were changing simultaneously and were not addressed in the study.[64] Finally, one commenter presented an argument that integrated refiners would have an incentive to attempt to prevent the value of the RIN from being reflected in the wholesale prices of gasoline and diesel.[65] This comment effectively argued that parties that purchase

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advantages claimed by the commenter for refiners that blend ethanol vs. those that buy RINs to meet their RVO.

[63] See, for example, Charles River Associates *Evaluating the Response of Blender Margins to RIN Price Changes*, February 2017.

[64] For example, the local market demand vs. supply (whether the local market is short or long on gasoline) can have a significant impact on blender margins. We further note that this study did not consider data prior to 2013, which would have allowed for consideration in the variability of blender margins during a time when RIN prices were very low.

[65] See Comment from Bob Neufeld, Neufeld Consulting LLC, EPA-HQ-OAR-2016-0544-0272.

bulk quantities of gasoline blendstock (such as unobligated blenders or refiners that market more fuel than they refine) would be incentivized to keep the purchase prices of these products low. It does not, however, address why the parties would be effective in negotiating sales prices that do not reflect the value of the RIN.[66] The wholesale price of gasoline and diesel is determined by the relative supply and demand of these products, and the supply curves for refined products reflects all relevant costs, including crude oil costs, labor and capital costs, and RFS compliance costs.

The EPA also received numerous comments from a variety of stakeholders, including refiners, retailers,

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[66] In his comments Mr. Neufeld effectively assumes that parties that purchase gasoline and diesel at wholesale will be able to set the market price at a level that does not reflect RIN costs. EPA believes this is highly unlikely. The only evidence Mr. Neufeld presents to support his arguments are several calculations contained in a powerpoint presentation (also submitted in his comments on the proposed denial). We believe there are several fundamental flaws in the calculations presented in this document. First, in his calculations Mr. Neufeld uses E10 and BOB prices from Mitchell, South Dakota but ethanol prices from Chicago. This is highly problematic as the relevant ethanol price for these calculations is the price in Mitchell, South Dakota, which may be higher than the price in Chicago. This is particularly important when the relevant margins are only a few cents. Mr. Neufeld also ignores any blending costs that would be realized by parties purchasing ethanol and BOB separately but not by parties purchasing blended E10. In comparing blending margins between marketers/retailers and obligated refiners he assumes that integrated refiners receive the market price for BOBs, which is not the case if they are selling blended fuels (rather than BOBs) and retaining the RINs for compliance purposes. Finally, we note that any assessment focusing on a single location may not adequately represent the full economics of a national level program.

and academic researchers supporting our assessment that merchant refiners generally recover the cost of the RINs they purchase through higher prices for the petroleum based fuels they produce.[67] Along with the assessments cited in the discussion above, we believe two related papers by Knittel et al and a paper prepared by Argus Consulting Services, all of which were submitted in comments to our proposed denial, present compelling evidence that merchant refiners are able to recover the cost of RINs.[68] All of these papers examined the wholesale prices of petroleum fuels that are very similar with the exception of whether or not the producers of these fuels incurred an RFS obligation (for example, diesel fuel and jet fuel prices from the U.S. gulf coast). Unlike other studies that examined indirect indicators that are susceptible to many factors outside of the RFS program such as blender margins or crude oil crack spreads, this methodology allows the authors to directly assess the impact of RIN prices on fuels that are very similar both physically and chemically.[69] The authors of these

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[67] For example, see comments submitted by Marcia Pica Karp, Chevron, EPA-HQ-OAR-2016-0544-0209; David Masuret, Cumberland Farms, EPA-HQ-OAR-2016-0544-0160; C.R. Knittel et al. EPA-HQ-OAR-2016-0544-0280.

[68] Knittel, Christopher R., Meiselman, Ben S., and Stock, James H. *The Pass-Through of RIN Prices to Wholesale and Retail Fuels under the Renewable Fuel Standard*, November 2016.; Knittel, Christopher R., Meiselman, Ben S., and Stock, James H. *The Pass-Through of RIN Prices to Wholesale and Retail Fuels under the Renewable Fuel Standard: Analysis of Post-March 2015 Data*. November 23, 2016.; Argus Consulting Services. *Do Obligated Parties Include RIN costs in Product Prices?* February 2017.

[69] Argus Consulting Services also examined the average price ratio between RBOB and ULSD to crude prior to 2013 and between 2013 and 2016 which, while not conclusive on its own, similarly indicated that refiners were reflecting RIN costs in the

papers concluded that the RIN cost was generally included in the sales prices of obligated fuels. Knittel et al further found that the RIN pass through, or the ability of the merchant refiners to recover the cost of RINs was complete (not statistically different than 100%) and occurred quickly (within 2 business days).[70]

Multiple commenters critiqued methods used by Knittel et al in these papers.[71] These critiques generally focused on 3 issues: the removal of Brent crude based spreads from the assessment, the addition of a NYH CBOB – Rotterdam EBOB spread, and the pooling approach used by the authors. The removal of the Brent crude based spreads improves rather than diminishes the assessment presented by Knittel et al. We believe the impact of the RIN price on the wholesale price of refined products is most clearly seen by comparing pairs of refined products rather than comparing crude prices to refined product prices, as many compounding factors can and do influence the price relationship between crude oil and refined products. Further, while there may be concerns related to the appropriateness of the decisions by the authors to include an additional refined product price spread and pool the results of the various comparisons, EPA does not believe these decisions had a significant impact on the conclusions of the paper. Even if the EPA excludes consideration of the additional refined product pair and assesses the five original refined product spreads individually rather than together as suggested by

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prices of RBOB and ULSD. Argus also noted that both Argus and Platts include RVO cost considerations in their pricing methodology.

[70] Ibid.

[71] Charles River Associates. *Review of Updated Pass-Through Analysis of Knittel, Meiselman and Stock*. February 2017.

commenters critiquing the Knittel et al paper, this paper provides compelling evidence that the RIN price is reflected in the wholesale price of refined products subject to an RFS obligation, and that the RIN cost is therefore generally recovered by obligated parties, including merchant refiners.

In their petition, Valero, while generally acknowledging their efforts to recover RIN costs through higher prices for their petroleum blendstocks,[72] nevertheless claims that the RFS program leaves them at a disadvantage relative to integrated refiners. They argue that while both merchant and integrated refiners receive higher prices for their petroleum blendstocks as a result of the RFS obligations, merchant refiners must use this additional income to purchase RINs for compliance while integrated refiners acquire the RINs they need for compliance "for free" by blending renewable fuels.[73] This argument is illogical as it simply ignores the cost that integrated refiners pay to acquire RINs.

Unlike merchant refiners, integrated refiners generally acquire most of their RINs by purchasing renewable fuel with attached RINs. After blending the renewable fuel with petroleum blendstocks to produce finished transportation fuel, integrated refiners separate the RINs and keep them to demonstrate compliance,

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[72] For example, see Valero Petition for Rulemaking, June 13, 2016. Page 18. In more recent communications with EPA Valero has questioned the ability for merchant refiners to recover the full cost of the RIN through the price of their petroleum blendstocks under current market conditions.

[73] For example, see Valero Petition for Rulemaking, June 13, 2016. Page 16.

or in some cases sell excess RINs to other obligated parties.

While the integrated refiners generally do not purchase separated RINs with an easily-identified price, it is not the case that they acquire these RINs for free.[74] They no more receive the RIN for free than one receives an engine for free when purchasing a car. In examining wholesale prices for gasoline blendstocks, ethanol, and blended E10, EPA found that the listed prices for blended E10 were consistently lower than the price that would be expected based on the selling prices of the component fuels.[75] In other words if we were to ignore the RIN revenue, parties that produce E10 by blending gasoline blendstocks with ethanol would be losing money on every gallon of E10 they produce. A gallon of E10 is generally produced by blending 0.9 gallons of gasoline blendstock (usually CBOB or RBOB) with 0.1 gallons of ethanol. The listed price for E10, however, was lower than the price of 0.9 gallons of gasoline blendstock plus 0.1 gallons of ethanol.[76] Thus, integrated refiners are selling blended E10 for a lower price than they could receive for the component fuels (petroleum blendstock and ethanol) to acquire the RINs that can be separated and retained if they sell blended E10. Integrated refiners therefore experience the cost of acquiring RINs when they sell blended fuels for a lower price than the blend components,

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[74] Parties that acquire RINs through blending have affirmed that they do not receive RINs for free. For example, see testimony from Chris Vergona of Musket Corporation on the proposed 2018 RFS annual rule.

[75] "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effect," Dallas Burkholder, Office of Transportation and Air Quality, US EPA. May 14, 2015.

[76] Ibid

while merchant refiners experience RIN costs when they purchase separated RINs. In each case there is a cost to the refiners to acquire RINs, and in each case they recover this cost through higher petroleum blendstock prices. In a presentation to the EPA, Murphy USA discussed this market reality, stating that the RIN prices supported a negative "spot-to-rack margin."[77] They are purchasing petroleum blendstocks from refiners for a higher price than they can recover for this product when sold at the rack as blended E10 but maintaining profitability through RIN sales. This observed market practice supports the findings by the EPA and other parties that despite the higher prices of petroleum blendstocks resulting from higher RIN prices, the costs of transportation fuel to consumers have not increased as Valero has claimed.[78]

While the EPA continues to believe that refiners, including merchant refiners, are generally able to recover the cost of RINs through the prices they receive for the petroleum blendstocks they sell, we also acknowledge that there are many diverse factors that impact each individual refiner's profitability and their

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[77] See Presentation from Murphy USA to EPA, August 16, 2016.

[78] "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effect," Dallas Burkholder, Office of Transportation and Air Quality, US EPA. May 14, 2015 and Knittel, Christopher R., Ben S. Meiselman, and James H. Stock. The Passthrough of RIN Prices to Wholesale and Retail Fuels Under the Renewable Fuel Standard. Working Paper 21343. NBER Working Paper Series. Available online <http://www.nber.org /papers/w21343.pdf>. While these papers demonstrate that the cost of transportation fuel to consumers does not increase due to higher RIN prices, EPA acknowledges that higher renewable fuel obligations can lead to higher transportation fuel prices for consumers if renewable fuels cost more than the petroleum based fuels they displace.

ability to recover their full cost of production (including crude oil costs, labor costs, capital costs, regulatory and compliance costs, etc.). These factors include, but are not limited to, the refinery's location, their access to various types of crude oil, the local demand and competition for refined products. In recent years, a number of factors have led to an oversupply of refined gasoline and diesel in the United States. In such a market we would expect significant pressure on refining margins as the supply of refined products outpaces demand and refiners compete with one another to find markets for their products (potentially including exports) and maintain market share. These market conditions are expected to result in reduced profit margins for refiners, and in some cases refiners may struggle to remain profitable.[79] In evaluating whether or not to change the point of obligation, however, it is important to consider whether these challenges are caused by the current point of obligation in the RFS program (rather than more broad market conditions), and whether changing the point of obligation would be expected to address these challenges. Based on the information discussed above, we do not believe the challenges faced by some refiners in the current market are the result of their designation as obligated parties in the RFS program.

The EPA also examined claims made by the petitioners that unobligated blenders were reporting windfall profits by selling RINs. The petitioners primarily sup-

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[79] See *2017 US Refining Forecast: Lean Times* Ahead, Opportune LLP, December 7, 2016. Available online: https://www.lexology.com/library/detail.aspx?g=b7ae9acf-fc7d-466c-92a8-43b9fc005722. In recent years, US refinery profitability has benefited from exporting excess refined products given their favorable economics situations compared to many foreign refiners.

ported these claims by referencing the financial statements of companies that acquire RINs by blending renewable fuels and who sell these RINs to obligated parties, but are not obligated parties themselves.[80] EPA does not believe that the information presented by the petitioners substantiates their claims that unobligated blenders are generating windfall profits from RIN sales. First, we note that the fact that companies report income for RIN sales does not indicate that these companies are receiving a windfall from the RFS program. This is equivalent to claiming a company's reported sales are equivalent to their profits, while ignoring their expenses to acquire the good sold. While it is true that for companies such as Murphy USA who sell a significant number of RINs their "revenues are impacted by [their] ability to generate revenues from activities such as blending bulk fuel with ethanol and bio-diesel to capture and subsequently sell Renewable Identification Numbers,"[81] this does not mean that these companies receive a windfall profit from RIN sales. Such an assessment ignores costs that the company realized in order to acquire these RINs, such as lower fuel margins than would have been realized if the party did not blend renewable fuels and any investments in infrastructure that the company has made to enable them to blend renewable fuels and distribute these fuel blends. Statements from Murphy USA cited in the AFPM petition to support AFPM's claim that non-obligated blenders are realizing windfall profits from RIN sales in fact support EPA's views of the market. In a recent earnings call, the President of Murphy

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[80] The parties most commonly cited by the petitioners are Murphy USA and Casey's General Stores.

[81] Murphy USA, Inc., U.S. SEC Form 10-K for the financial year ended December 31, 2015.

USA stated "if you add the combination of the gross margin from product supply and wholesale and the RINs and divide over the total retail gallons sold, you actually see a fairly consistent incremental $0.025 per gallon over the past two years."[82] In other words, overall fuel supply margins (including RIN sales) have been relatively consistent despite the significant increase in RIN prices. This supports the EPA's view that RIN costs and revenues must be viewed in combination with other product supply and wholesaling margins. The EPA received many comments from blenders indicating that the RIN value is used to offset the cost of blending, and that the value of the RIN is used to pass savings onto consumers.[83] Additionally, many blenders indicated that they purchase fuel above the rack only some of the time, and instead chose to purchase blended fuel below the rack at times, based on factors such as geography, store density, suppliers, relationships with terminals and infrastructure.[84]

The EPA recognizes that there are many factors that affect the profitability of participants in the fuels market, and disagrees that the available information supports a conclusion that RIN revenues are leading

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[82] Transcript of Murphy USA First Quarter Earnings Call, Andrew Clyde, President, Murphy USA, Thompson Reuters (Feb. 4, 2016). Citation from AFPM's petition for rulemaking, August 4, 2016. (page 15).

[83] See, e.g., Comments submitted by Cumberland Farms, EPA-HQ-OAR-2016-0054-0160.; SEI Fuel and 7-Eleven, EPA-HQ-OAR-2016-0054-0133.;

[84] See, e.g., Comments submitted by SEI Fuel and 7-Eleven, EPA-HQ-OAR-2016-0054-0133. Fuel purchased below the rack would not have an RFS obligation even if EPA changed to point of obligation to the "position holders" as the petitioners have requested.

to windfall profits. In 2014 and 2015 Murphy USA reported RIN sale revenues of $93 million and $118 million respectively. If this income represented windfall profits, we would expect that the net income of Murphy USA would be approximately $100 million per year higher than it was prior to the significant increase in RIN prices in 2013. In fact, while Murphy USA's profits in 2014 and 2015 of $244 million and $176 million[85] were significantly higher than in 2012 ($84 million), they were significantly less than net profits in 2011 ($324 million).[86] While we acknowledge that there are many factors that impact the profitability of a company such as Murphy USA in any given year, we nevertheless believe that the data before the Agency does not support the claims by some parties, whether explicit or implicit, that RIN sales represent windfall profits to companies that blend renewable fuels.

Further, statements from Casey's General Stores and Murphy USA contradict the notion that RIN sales represent windfall profits for unobligated blenders. Murphy USA reported that in the third quarter of 2014 income received from RIN sales offset negative product supply and wholesale margins.[87] This statement is in line with statements from Murphy USA cited above and EPA's view of the market explained in

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[85] Murphy USA net profit numbers for 2014 and 2015 from Murphy USA, Inc., U.S. SEC Form 10-K for the financial year ended December 31, 2015.

[86] Murphy USA net profit numbers for 2011 and 2012 from Murphy USA, Inc., U.S. SEC Form 10-K for the financial year ended December 31, 2013.

[87] *Murphy USA Inc. Reports Third Quarter 2014 Results.* Yahoo! Finance, November 5, 2014. Available online <http://finance.yahoo.com/news/murphy-usa-inc-reports-third-220006760.html>.

the preceding paragraph, that companies that blend renewable fuels with petroleum blendstocks to produce finished transportation fuel must purchase petroleum blendstocks at a higher price that reflects the cost of the RIN, and sell blended transportation fuel at a lower price that reflects their ability to separate and sell the RINs associated with the renewable fuel, to offer finished fuel at a competitive price. In effect, these parties sell the finished transportation fuel at a loss (or a much smaller margin than would be sustainable in a market without RIN obligations) in order to obtain RINs. In their annual report filed in June 2015, Casey's General Stores directly stated that their general pricing practice is to price to their competition,[88] a practice the EPA has repeatedly stated we expect is the general practice in competitive markets. We believe this competitive pricing behavior is incompatible with the windfall profits suggested by the petitioners.

Many commenters addressed the issue of the potential for unobligated blenders to earn windfall profits from RIN sales and the competitive advantages these RIN sales could provide relative to small retailers that do not blend renewable fuels. Many commenters, including several large retailers and unobligated blenders, agreed with the EPA's assessment of the market and affirmed that unobligated blenders are not realizing windfall profits from RIN sales.[89] One commenter

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[88] Casey's General Stores, Inc., Annual Report (Form 10-K) (June 26, 2015).

[89] For example, see comments from Casey's General Stores, Inc, EPA-HQ-OAR-2016-0544-0268, NATSO EPA-HQ-OAR-2016-0544-0282, SEI Fuels and 7-Eleven, EPA-HQ-OAR-2016-0544-0133, Murphy USA, EPA-HQ-OAR-2016-0544-0372, QuikTrip, EPA-HQ-OAR-2016-0544-0198, and KwikTrip, EPA-HQ-OAR-2016-0544- 0105.

provided data from their local market including the prices of ethanol, gasoline blendstocks, RINs, and other costs associated with supplying blended transportation fuel demonstrating that the value of the RIN was indeed reflected in the wholesale price of E10 and was not withheld by the fuel blender.[90] This commenter presented further information demonstrating that despite their status as a largely unobligated blender, the RIN prices had no impact on their retail fuel margins from August 2008 through August 2016.[91]

Other commenters, however, questioned this finding, with several submitting papers or public statements made by representatives of unobligated blenders supporting their views.[92] Two primary references often cited by commenters, which are generally representative of comments received on this issue, are a report on the estimation of the margins of large retailers by Ramon Benavides and a paper authored by Dr. Weinstein on the consequences of RIN trading for small retailers.[93] The paper by Mr. Benavides

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[90] See comments from Cumberland Farms, EPA-HQ-OAR-2016-0544-0160. As part of their comment Cumberland Farms also submitted a screen shot of the software they use to calculate and account for E10 fuel costs. The value of the RIN is directly taken into account in their pricing calculations.

[91] Ibid.

[92] For example, see comments from Valero, EPA-HQ-OAR-2016-0544-0274, Small Retailer Coalition, EPA-HQ-OAR-2016-0544-0344, Buffalo Services, Inc., EPA-HQ-OAR-2016-0544-0184, Friendly Mart Food Stores, EPA-HQ-OAR-2016-0544-0387.

[93] Benavides, Ramon M. *Renewable Fuel Incentives: Estimation of Large Retailers' Margins* and Weinstein, Dr. Bernard L. *Renewable Identification Numbers (RINs) Trading Under the Renewable Fuels Program: Continued Unintended Consequences for Small Fuel Retailers Updated Report*. February 2017.

attempts to estimate retail margins for two large retailers (Pilot/Flying J and Loves) compared to reported national averages. After finding higher than average retail margins, Mr. Benavides attributes these higher margins to the ability to retain the value of the RIN when blending renewable fuels. This paper, however, contains several methodological flaws. As noted in comments by the National Association of Truck Stop Owners (NATSO)[94] the paper considers only data from a single day rather than an extended time period, used broad market data rather than data specific to the companies it assesses, does not consider costs to transport renewable fuels to retail outlets, simply assumes that retailers retain 100% of the value of the RIN and any tax credits associated with the renewable fuel, and does not account for the actual prices paid by their customers (which often include significant discounts from posted prices). The paper also incorrectly assumes a uniform, nationwide price for renewable fuels. Finally, even if the higher margins suggested by this paper are accurate (which appears highly unlikely), the paper makes no attempt to attribute this higher margin to the value of the RINs versus other factors that may contribute to higher margins of the companies assessed relative to the national average such as these parties' ability to buy fuel in bulk, high fuel sales volumes, etc.

The EPA also reviewed the paper prepared by Dr. Weinstein for the Small Retailer Coalition on the unintended consequences of the RFS program for small fuel retailers.[95] In concluding that the current point of

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[94] See comments from NATSO, EPA-HQ-OAR-2016-0544-0282.

[95] Weinstein, Dr. Bernard L. *Renewable Identification Numbers (RINs) Trading Under the Renewable Fuels Program: Con-*

obligation could disadvantage small retailers (relative to large retailers with the ability to blend renewable fuels and separate RINs) Dr. Weinstein relied on two primary sources; the paper by Mr. Benavides discussed above and statements by several large companies that own retail fuel stations and blend renewable fuels. Generally, Dr. Weinstein highlights income associated with RIN sales and statements that access to RINs and RIN revenue advantages these companies relative to their competitors as the basis for his conclusions. However, these statements do not justify Dr. Weinstein's conclusions. First, as discussed above, income from RIN sales is not equivalent to profits from the separation of the RINs, nor is it evidence that these parties can retain all or a significant portion of the value of the RINs. Indeed, as highlighted in the statement by Murphy in their Form 10-Q filed on November 3, 2016 (quoted in Dr. Weinstein's paper) Murphy accepts negative product supply and wholesale margins in order to get access to RINs. The RINs are not "free" to these large retailers, and do not represent windfall profits. Additionally, statements that these companies are advantaged relative to their competitors with respect to their ability to realize additional margin from RINs and RIN sales do not suggest windfall profits as a result of the current point of obligation in the RFS program. There are many reasons these companies could be advantaged relative to their competitors with respect to their ability to realize profits from RINs and RIN sales such as advantageous long term contracts for renewable fuels, access to renewable fuels with higher value RINs (such as advanced or cellulosic biofuels, as alluded to by Couche-Tard's

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tinued Unintended Consequences for Small Fuel Retailers Updated Report. February 2017.

CFO Claude Tessier), better retail markets for higher level blends of renewable fuels, and the ability to hold RINs in an effort to sell when the prices are most favorable.[96] None of these factors are the result of the point of obligation in the RFS program, nor would any of them change if EPA were to change the point of obligation as the petitioners suggest.[97]

After reviewing the comments submitted on our proposed denial of the petitions to change the point of obligation in the RFS program, the EPA reaffirms the position stated in our proposed denial. We do not believe the available data indicates that large retailers or unobligated blenders are realizing windfall profits as the result of their access to RINs. On the other hand, a contrary finding is well supported by the data presented here and the supporting comments submitted by many with direct knowledge and experience on this issue. While we recognize that many small retailers may be facing significant economic hardship, we do not believe this hardship is primarily or even materially caused by the current point of obligation in the RFS program, but rather by a number of broader market factors (see Section II.D for a further discussion of this issue).

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[96] See comments from the Small Retailers Coalition, EPA-HQ-OAR-2016-0544-0344.

[97] These advantages are related to the company's ability to acquire renewable fuels at lower prices than their competitors or their ability to sell renewable fuel blends at higher prices than their competitors. To the degree these advantages exist, they are highly unlikely to be impacted by a change in the point of obligation.

D. The Current Regulations Do Not Appear to Negatively Impact Small Retailers

The EPA received comments from the Small Retailers Coalition, an organization created in 2016 representing over 200 owners of gas stations and convenience stores, as well as comments from a number of parties that own and operate retail fuel stations.[98] EPA also received comments from the National Black Caucus of State Legislators echoing many of the concerns raised by the Small Retailers Coalition, contending that independent gasoline retail stations are harmed by the current point of obligation.[99] These comments suggested that the current point of obligation is harming small retailers by allowing their competitors to obtain and sell RINs which allow their competitors to more competitively price their fuels. They contend that their competitors are gaining a $0.10-$0.15 per gallon advantage over small and medium suppliers. Commenters further suggest that this pricing advantage is available to their competitors as a result of their ability to realize windfall profits from RIN sales and that the disparity will likely result in the closure of a large number of the stores owned by single-store

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[98] For example, see comments from the Small Retailer Coalition, EPA-HQ-OAR-2016-0544-0344; Short Stop, EPA-HQ-OAR-2016-0544-0174; L & L Stores, EPA-HQ-OAR-2016-0544-0426. EPA also received a series of comments from the Petroleum Marketers Association of America (PMAA). Initial comments from PMAA indicated support for maintaining the current point of obligation, however in subsequent correspondence PMAA stated it was taking a neutral position on where the point of obligation should be placed due to growing concerns for unfair competition in the retail market. EPA believes these concerns are adequately addressed in this section.

[99] Comment from National Black Caucus of State Legislators, EPA-HQ-OAR-2016-0544-0166.

owners and medium sized gas stations and convenience stores. According to some commenters, such closures could lead to lower levels of competition among parties that sell gasoline and diesel at the retail level, ultimately leading to higher fuel prices for consumers. Some commenters suggested that because large retailers are realizing such significant profits from RIN sales they have no incentive to invest in infrastructure to expand the availability and use of renewable fuels, and in some cases large retailers may actively work to restrict the expansion of this infrastructure, since commenters claim expanded infrastructure would reduce RIN prices. In comments, the Small Retailers Coalition suggested EPA should consider the impacts on small retailers of the current point of obligation in EPA's response to the petitions to change the point of obligation.[100] EPA has done as the Coalition has suggested, and EPA's analysis is provided in this document.

While the EPA recognizes the very real economic challenges faced by single-store owners and medium sized gas stations and convenience stores, we do not believe these challenges are primarily, or even materially, the result of the current point of obligation in the RFS program or the RFS program more generally. As discussed in further detail in Section II.C above, EPA does not believe that the comments submitted on our proposed denial adequately support the claims that large retailers and unobligated blenders are able to realize windfall profits from RIN sales. After carefully

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[100] Comments from Small Retailers Coalition, EPA-HQ-OAR-0544-0185. The Small Retailers Coalition has also recently filed a complaint alleging that EPA has failed to do this analysis. See Small Retailers Coalition v. US EPA and Scott Pruitt, W.D. Tex., Case 7:17-cv-00121, Complaint filed 8/28/17.

reviewing the comments and the available market data the EPA reaffirms that while unobligated parties that acquire RINs by blending renewable fuels (such as large retailers) can and generally do receive significant revenue through the sale or RINs, there is a cost to acquiring these RINs that is approximately equal to the revenue received through their sale. We also note that it is implausible that such a significant price advantage ($0.10 to $0.15 cents per gallon according to the Small Retailers Coalition, which is approximately 3 times higher than the average profit per gallon)[101] could be sustained in the highly competitive retail fuel market. To the degree that larger competitors are able to access lower cost fuels, there is no basis for concluding that these advantages are attributable to the RFS program. Rather, we believe that the significant challenges faced by many small retailers are rather the result of challenges in the retail fuels market such as a declining demand for refined transportation fuels (particularly gasoline), increased competition from large retailers and high-volume retail outlets, a lack of flexibility in fuel purchasing options relative to larger (often unbranded) retailers, and many others, many of which were mentioned by the small retailers in their own comments. After reviewing the information submitted by the petitioners and commenters, along with other market data, EPA has concluded that large retailers do not have the incentive or ability to effectively inhibit the greater use of renewable fuels in the United States (See Sections III.B – III.E below for a further discussion of these issues. While we understand that small retailers face significant economic challenges, these challenges are unrelated to the RFS

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[101] According to NACS, the average retail fuel margin is about 3 to 5 cents per gallon (NACS. *2015 Retail Fuels Report*).

program, and would not be fundamentally altered by changing the point of obligation in the RFS program.[102]

E. The EPA Has Not Seen Evidence That High RIN Prices Have or Will Force Refiners to Decrease Production or Increase Exports

In their petition, Valero suggested that if the EPA does not change the point of obligation of the RFS program it could lead to obligated parties, particularly merchant refiners, decreasing their production of obligated fuels or increasing their exports of refined products in an effort to minimize the RFS obligations.[103] As discussed above, both merchant refiners and integrated refiners experience RIN acquisition costs, and both recover these costs through the price of the petroleum products they sell. The RFS program therefore does not impact merchant refiners in a way that would make them more or less likely than integrated refiners to decrease production of gasoline and diesel or increase exports of these fuels. Rather, decisions to

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[102] In addition to believing that the RFS program is not harming small retailers generally, the EPA has also been presented with claims that the RFS program can benefit small retailers. The EPA received comments from the Petroleum Marketers and Convenience Stores of Iowa indicating that small retailers are benefiting from the RIN value through RIN trading via third party aggregators. Comments from Petroleum Marketers and Convenience Stores of Iowa, EPA-HQ-OAR-2016-0544-0199.

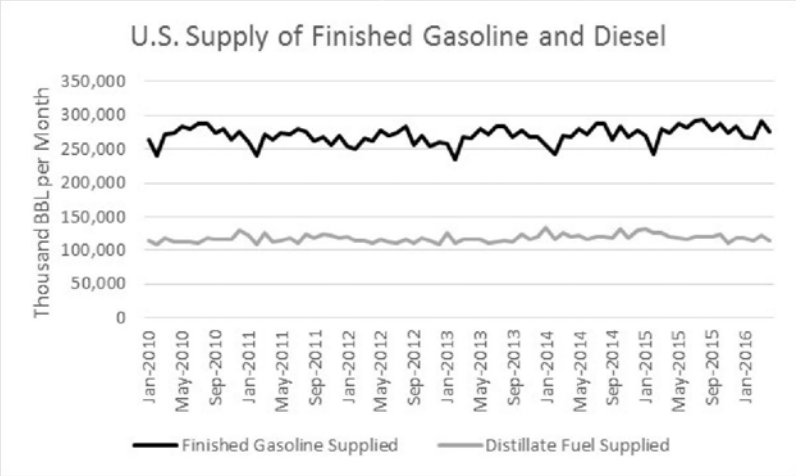
[103] One commenter (NERA) claimed that since RIN costs are reflected in the wholesale price of gasoline blendstocks high RIN prices would encourage gasoline exports, as exported gasoline could receive the value of the RIN without incurring the RIN obligation. This commenter ignored the fact that the market price for exported gasoline is discounted relative to gasoline sold for the domestic market, and that this discount reflects the cost of the RIN obligation (for further discussion of this issue, see Section II.C above).

decrease production or increase exports are driven by broader market factors, which effect both merchant and integrated refiners.

We also note that the idea that the RFS program could result in a reduced supply of gasoline and diesel to the United States through lower production volumes or increased exports is not new, as obligated parties have been suggesting that this could be a potential outcome of increasing RFS standards since the beginning of the program. Despite these warnings, and even with increasing vehicle fuel efficiency in the United States in previous years, the significant increase in both the RFS standards and RIN prices have not resulted in obligated parties taking these actions, as seen in the following graph.[104] Were high RIN prices to have this effect, one would expect to have seen a drop in fuel supply beginning in 2013, when RIN prices spiked.

[104] The EPA also performed a separate analysis of refinery closures, derating, and expansions from 2013-2017. See Section III.G for a further discussion of the impact of the RFS program on refining capacity.

Figure 1



Data from EIA. Available at http://www.eia.gov/dnav/pet/pet_cons_psup_dc_nus_mbbl_m.htm

The lack of any impact on finished gasoline and diesel supply to the United States is not surprising, since as was discussed in Section III.B.2 above, data reviewed by the EPA show that obligated parties are generally receiving higher prices for fuels they produce that are subject to an RFS obligation (gasoline and diesel fuel sold for use in the United States), which offsets the cost of compliance with the RFS program. By contrast, if they export the gasoline and diesel fuel, they would not have costs associated with acquiring RINs but would also not receive the higher value for their petroleum products associated with RFS compliance costs. An obligated party's ability to recover RIN costs through the price of obligated blendstocks in some ways is similar to their ability to recover fuel taxes. Though state fuel tax rates vary from state to state these differences in fuel tax rates do not cause fuel shortages in states with higher tax rates, as parties that sell fuel are able to recover the cost of the taxes in the prices of

the products they sell. Companies make decisions about which market segments to participate in for a variety of reasons, but we believe the demand for transportation fuel in the United States is strong enough that refineries and importers will continue to meet demand on a competitive basis, even if participating in the market incurs RFS obligations.

Several commenters pointed to increased exports of refined products (gasoline and diesel fuel) in recent years as evidence that the RFS program, and high RIN prices in particular, were incentivizing increasing exports. We acknowledge that exports of gasoline and diesel have been higher in recent years relative to 2010.[105] We do not, however, believe that these increasing exports are driven by the RFS program. Notably, total production of finished gasoline and distillate in the United States has increased significantly since 2010[106] due to a number of factors including access to low cost crude oil and natural gas and high refinery utilization rates. During this same time period, demand for refined products in the United States has been fairly constant.[107] Refiners seeking export markets

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[105] See EIA data on Weekly U.S. Exports of Total Distillate (https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WDIEXUS2&f=W) and Weekly U.S. Exports of Finished Motor Gasoline (https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=W_EPM0F_EEX_NUSZ00_MBBLD&f=W).

[106] See EIA data on U.S. Refinery and Blender Net Production of Distillate Fuel Oil (https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MDIRPUS1&f=M) and U.S. Refinery and Blender Net Production of Finished Motor Gasoline (https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MGFRPUS1&f=M).

[107] See EIA data on Weekly U.S. Product Supplied of Distillate Fuel Oil (https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WDIUPUS2&f=W) and Weekly U.S. Product Supplied

for their products at a time when supply increases have outpaced domestic demand for their products is a natural response, and is unrelated to the RFS program.

F. A Relatively Small Number of Obligated Parties is Generally Advantageous

In the 2007 RFS1 rule, the EPA indicated that it considered it preferable to place the point of obligation on a smaller number of refiners and importers rather than on a larger number of downstream blenders. This is primarily because placing the obligation on a smaller number of parties with significant assets generally results in a more efficient, and therefore more effective program. In the proposed RFS2 rule, we noted that blenders would likely be regulated as RIN holders under the expanded program, and questioned whether also making them obligated parties would significantly increase their regulatory burden. After considering comments, we chose in the final RFS2 rule to maintain the RFS1 approach, noting, among other reasons, that changing the point of obligation to include blenders could lead to disruption of the program in the transition of RFS1 to RFS2. After promulgating the final RFS2 rule we gained additional experience implementing the program that further supports our decision to maintain the current approach. Under the current system, it is renewable fuel producers who generate RINs, for gallons of biofuel produced, and it is the refiners and importers of gasoline and diesel fuel who must retire the RINs to demonstrate compliance. While the EPA is engaged in compliance and enforcement activities to address instances of invalid RINs in

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of Finished Motor Gasoline (https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WGFUPUS2&f=W).

the marketplace, the sheer volume of RINs and RIN transactions makes it critical to also leverage the participation of obligated parties in policing the RIN market. In addition, refiners and importers are subject to significant requirements related to environmental, safety, and health concerns, and the expertise they have developed in maintaining compliance contributes to the success of the RFS program.

Refiners and importers generally have greater resources that enable them to provide oversight of the RIN generators to help ensure that the RINs being traded in the marketplace are valid. They have invested significantly since the finalization of the RFS regulations to develop compliance processes and expertise in these markets. Changing the point of obligation would potentially disrupt the systems developed by these parties, strand their investments, and would require that newly obligated parties make the necessary investments to enable compliance with their new RFS obligations. This could take a significant amount of time and represent a significant financial burden to the new obligated parties, especially as we expect that many would be smaller companies with fewer resources than the existing obligated parties.

In contrast to the currently regulated refiners and importers, many "position holders" and blenders sell relatively small volumes of gasoline and diesel, and are likely relatively small entities without the personnel or expertise available to fill the role currently played by obligated parties in policing the validity of the RINs in the market. This concern was affirmed by our analysis of a data set recently provided to us by the Internal Revenue Service (IRS) (for a fuller discussion of the data the EPA received from IRS, and the EPA's assessment of this data, see Sections IV.A and

IV.B). The IRS data set included the volume of gasoline and diesel sold by all "positions holders" aggregated into groups of five and arranged from highest to lowest volume.[108] When the EPA overlaid this data set with our volume data for obligated parties (grouped in the same manner as the IRS), we found there were about 300 more parties in the IRS data set. Moreover, as discussed below, when we compared the total volume associated with "position holders" we found that more than half of the "position holders" (those with the smallest volumes) were responsible for less than 1% of the aggregate volume. Our conclusion from this comparison is that there is a significant number of small volume parties that are current "position holders" (subject to the IRS fuel tax laws) that would become new obligated parties, would likely not be familiar with how to comply with the RFS requirements and may not have the resources to do so. While it is possible that they would develop this expertise over time, the relatively small size of many of these entities may mean that the important market-policing function currently performed by obligated parties could be largely compromised by changing the point of obligation. This result is more likely considering that the current obligated parties tend to have larger assets that could be put at risk from non-compliance, and therefore take compliance with the RFS very seriously. Placing the RFS compliance obligations on refiners and importers also reduces the overall cost associated with the RFS program, as these parties benefit from econo-

[108] For example, IRS provided EPA with the total volume of gasoline and diesel sold by the 5 parties that sold the most gasoline and diesel, the total volume sold by parties that sold the 6th – 10th highest volumes of gasoline and diesel, etc. This IRS data was provided to the EPA on May 22, 2017. See *IRS Aggregated Volume Data*. This data is treated as CBI.

mies of scale and can better spread the costs associated with RIN acquisition and oversight over greater quantities of RINs.

In addition to these benefits to the program, a smaller number of obligated parties significantly decreases EPA's resource requirements associated with the administration of the RFS program. It reduces the number of annual compliance reports that must be reviewed by the EPA each year, and reduces the complexity associated with determining the volumes of gasoline and diesel for which each obligated party has a compliance obligation. This allows for more effective implementation and enforcement of the RFS program. In addition, we believe it is preferable to place the RFS obligation on larger companies with greater resources who are better positioned to comply with the RFS standards.[109]

Several commenters contested the EPA's statements that changing the point of obligation to the "position holders" would increase the number of obligated parties.[110] These commenters further argued that parties with enough capital and expertise to purchase fuel in bulk above the rack would be able to comply with RFS obligations. However, based on information from the IRS (discussed briefly above and further in Section IV.A and IV.B), we determined that

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[109] While the evidence before EPA demonstrates that the cost of RINs are generally recovered by the obligated parties, larger companies with greater resources are significantly more likely to have expertise related to complying with EPA regulations (including, but not limited to their RFS obligations), ensuring the validity of RINs, etc.

[110] For example, see comments submitted by Valero, EPA-HQ-OAR-2016-0544-0274; AFPM, EPA-HQ-OAR-2016-0544-0360; Monroe Energy, EPA-HQ-OAR-2016-0544-0368

if the point of obligation in the RFS program were placed on the "position holders," the number of obligated parties would increase significantly, and that many of these parties sell relatively small volumes of gasoline and diesel.

We note that if we had compelling evidence in front of us that placing the RFS obligation on a larger number of renewable fuel blenders or "position holders" would significantly increase the production, distribution, and use of renewable fuels, then a potentially higher number of obligated parties on its own would not likely be a reason to retain the current point of obligation. In light of the reasons discussed above, however, and because we do not think shifting the point of obligation would lead to higher renewable fuel production and use, and for other reasons discussed in this document, we believe that placing the obligation on the smaller number of refiners and importers is preferable.

G. The Current Program Structure Does Not Require Market Repositioning to Achieve Compliance

One of the petitions the EPA received requesting a change in the point of obligation in the RFS program took issue with language in previously published EPA documents suggesting that one potential avenue for obligated parties to acquire RINs is the purchase or construction of downstream blending assets.[111] The petitioner emphasized the challenges associated with the acquisition of such assets. They further claimed

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[111] See Valero Energy Corp. Petition for Rulemaking, June 13, 2016, 16-17. Valero referred to statements made by EPA in *A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effects* (May 14, 2015), written by Dallas Burkholder.

that this suggestion reflects a lack of understanding of the complexities of the fuel market, and implicitly suggests that investment in blending infrastructure is the only solution for merchant refiners to comply with the RFS.

The EPA strongly disagrees with the petitioner's assessments of the EPA's previous statements. In the document referenced by the petitioner, the EPA notes that the acquisition of downstream assets is merely one option open to obligated parties who seek an alternative to purchasing separated RINs necessary for compliance. The fact that ownership of positions at terminals and access to pipeline capacity[112] has continually changed over time suggests that similar changes are possible in the future, if parties were motivated to pursue these options. Most importantly, however, the EPA disagrees with the statement that our suggestion that acquiring downstream assets as one possible option open to obligated parties implies that ownership of these assets, as well as ownership of hydrocarbon at the time when renewable fuel is blended (generally at the rack), is the only option for acquiring the RINs needed for compliance with the RFS obligations. The EPA created the RIN system in accordance with Congressional direction, both as a general compliance mechanism for the RFS program and to allow for the generation and use of credits.[113] Purchasing separated RINs remains an option available for all parties to

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[112] While the ownership of positions at terminals and pipeline capacity are not necessary to enable ownership of gasoline or diesel blendstocks at the rack, owning positions at terminals and pipeline capacity are ways for obligated parties to retain ownership of petroleum blendstock at the rack, where it can be blended with renewable fuels.

[113] See CAA 211(o)(5).

acquire the RINs that are needed by obligated parties. The active market for RINs, which includes a significant stock of carryover RINs, demonstrates that RINs are available to parties who wish to purchase them. For example, according to EPA data there were over 50 billion RIN trades for the 2014 compliance year (the most recent year for which data are available).[114] We firmly believe that the RIN market is capably fulfilling this intended purpose of creating an avenue for obligated parties to comply with their RFS obligations by purchasing RINs, rather than requiring the acquisition of distribution and blending infrastructure and/or ownership of petroleum fuels at the rack. In this way, the RIN market enables compliance with RFS obligation without disrupting the fuels marketplace. Rather than a necessity, the acquisition of downstream infrastructure to enable direct access to RINs through the blending of renewable fuels at the rack remains one of several options. Parties may also purchase separated RINs in the RIN market, enter into contracts with other parties that blend renewable fuels to obtain RINs, and purchase renewable fuel with attached RINs, separate the RINs, and resell the renewable fuel without RINs in order to acquire the RINs needed to comply with the RFS standards.

H. The Current RIN Market Does Not Appear to be Subject to Significant Manipulation, and a Change in the Point of Obligation will not Reduce Fraud

Some commenters suggested the RIN market is not functioning due to manipulation and speculation

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[114] See Annual RIN Sales/Holdings Summary on EPA public website: https://www.epa.gov/fuels-registration-reporting-and-compliance-help/annual-rin-salesholdings-summary

within the market. Others noted that a lack of transparency in the RIN market allows for speculation, and that a revision of the definition of obligated party would increase transparency and reduce market abuse. It is not clear from comments how changing the definition of obligated party would increase transparency. Although the EPA has not seen evidence of manipulation in the RIN market, claims of market manipulation prompted the EPA to execute a memorandum of understanding (MOU) with the U.S. Commodity Futures Trading Commission (CFTC), which has the authority and expertise to investigate such claims. The EPA will continue to apprise the CFTC of allegations regarding potential market manipulation.[115]

Some commenters suggested that third party speculators (parties that are not involved in the production or blending of renewable fuels and are not obligated parties) and RIN-long parties are withholding RINs to drive up prices. They allege that third parties and RIN-long parties[116] are profiting from these actions at the expense of small and merchant refiners. These commenters have not provided sufficient evidence to support their claims that integrated refiners or unob-

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[115] Some commenters alleged speculation was negatively impacting the functioning of the RIN market. Speculation is a normal part of the market. Market participants that *speculate* on future supply or demand, and therefore prices, aren't doing anything wrong. In fact, this helps the market ensure that the future demand is met at the lowest overall price possible. Unlike market speculation, market *manipulation* involves a deliberate (and illegal) attempt to interfere with the free and fair operation of the market and create artificial, false or misleading appearances with respect to the price of, or market for, RINs.

[116] RIN-long parties are those who obtain more RINs through blending than their obligation under the RFS program; i.e., they are "long" on RINs as compared to their obligation.

ligated blenders (who would likely be RIN long) are intentionally withholding RINs from the market in an effort to manipulate RIN prices. As discussed further in Section II.B above, we do not believe that current RIN prices reflect successful efforts by some parties to artificially inflate RIN prices, but rather that they are reflect the costs associated with producing additional volumes of renewable fuel (in the case of biodiesel) or the financial incentives needed to sell additional volumes of higher level blends of renewable fuel (in the case of ethanol).

The EPA received some other comments that changing the point of obligation to the "position holders" would reduce fraud in the RFS program. These parties generally claimed that "position holders" are better equipped to ensure the validity of RINs because they are closer to the actual point of blending. In response to these comments, EPA notes that the majority of the RIN fraud seen in the RFS program to date has been for RINs associated with biodiesel. The majority of biodiesel is blended with diesel downstream of the rack. Therefore, "position holders," who by definition transfer ownership of the fuel at the rack, may be in no better position to monitor biodiesel blending than a refiner. Under the current Part 80 regulations, each obligated party incurs an RVO for both diesel and gasoline, even if they are only producing one of the two types of fuel. Likewise, if the point of obligation moved to "position holders," even "position holders" that only blend ethanol into gasoline would still incur an RVO for diesel and would still be required to acquire RINs from biodiesel blending.

Several commenters pointed to comments from Doug Parker indicating that the chain of custody between producer, blender, and refiner has led to

fraud within the RIN market. As an initial matter, historically, EPA has seen fraud within the RIN market at locations upstream of the point of compliance and the point of obligation. Generally, defendants in the majority of the RIN fraud cases brought to date generate RINs for fuel that is never produced, generate RINs for fuel that is not used for a qualifying purpose (transportation fuel, heating oil or jet fuel), or export renewable fuel without retiring the appropriate RINs. These cases have resulted in significant criminal convictions and a substantial number of associated civil enforcement cases. The EPA believes that our enforcement actions and increased due diligence by RIN purchasers have helped to deter these types of violations, and note that these fraud cases are unlikely to have been prevented by a different point of obligation due to the nature of the fraud.

Some commenters, relying on Doug Parker's analysis suggested that "shortening the RIN chain of custody between the point of compliance[117] and the point of obligation" would inherently reduce the opportunity and incentive for fraud.[118] These comments suggest that the current "chain of custody" places refiners and importers "multiple steps removed from the decision point on where renewable fuel is purchased in order to

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[117] Although the "point of compliance" is not defined in Parker's comments, EPA believes that this would be the point where renewable fuel is blended with non-renewable fuel. As mentioned above, for ethanol blending, this often occurs at the rack, however blending of biodiesel occurs most often downstream from the rack.

[118] See, e.g., Comments from Small Refiners' Coalition, HQ-OAR-2015-0054-0406.

blend it,"[119] and that blenders have direct engagement with renewable fuel producers and are better able to "assess the quality and integrity of their suppliers."

These commenters suggested that a change to the point of obligation would place compliance through blending closer to the renewable fuel source and would improve verification. Despite commenters suggestions to the contrary, the chain of custody between renewable fuel producers and obligated parties could be just as long as it is currently, and would likely be as long in the case of biodiesel, where renewable fuel is blended beyond "position holders," as discussed above. Because obligated "position holders" would still have four unique renewable fuel volume obligations, they would likely still have to sell and purchase RINs to meet their RVOs for types of renewable fuel which they are unable to blend. This is especially true for "position holders" that primarily sell a single fuel type, such as gasoline or diesel, and therefore have limited opportunities to blend ethanol or biodiesel respectively. Doug Parker's initial comments may have been based on a theory where the "blender" would be obligated, and would be the person with access to the renewable fuel that would be blended. For ethanol blending, the blender and the "position holder" are likely the same person, however, for biodiesel, it is much less likely that the blender and the "position holder" are the same person. In his comments, he states that "changing the point of obligation to the location where actual decisions are made on blending conventional and renewable fuel would . . . significantly enhance compliance

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[119] Parker, Doug. Update to: September 4, 2016 White Paper Addressing Fraud in the Renewable Fuels Market and Regulatory Approaches to Reducing this Risk in the Future. February 3, 2017.

and reduce opportunities for fraud."[120] However, changing the point of obligation to "position holders" would not always place the point of obligation where "actual decisions are made on blending;" for example, biodiesel blending decisions are often made below the rack. Thus, the disconnect between the point of obligation and the point of blending could still exist, and likely would for biodiesel. While changing the point of obligation to the position holder may shorten the chain of custody for RINs associated with ethanol, most of which is currently blended at the rack, we note that the vast majority of RIN fraud cases to date have been associated with biomass-based diesel (D4) RINs.

There continues to be a significant risk of invalid RINs in the market arising from the use of improper feedstocks, unapproved pathways or even improper attribution of pathways (e.g. overstating production of renewable fuel from cellulosic vs. non-cellulosic feedstocks). Smaller parties with less resources will have correspondingly less likelihood of detecting these problems. Doug Parker, in comments, also suggested that "soaring prices of RINs" act as an additional incentive for fraud. The EPA does not dispute that fraudulent activity often occurs for financial gain, but EPA disagrees that moving the point of obligation will reduce the price of RINs as discussed in this section and in Section III.

In arguing for a change in the point of obligation, Monroe Energy suggested that under the current definition of "obligated party," blenders and non-obligated parties who sell RINs have no incentive to ensure that their RINs are valid, and that refiners and importers are the only parties at risk when purchasing poten-

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[120] [This footnote has no content in the original version]

tially fraudulent RINs. The EPA notes that Monroe's statement is inaccurate since parties who sell RINs must register under the RFS program, and can be held liable if the RINs they sell are deemed invalid or fraudulent. Therefore, they do indeed have an incentive to ensure that RINs they purchase and sell are valid. However, we also believe that larger entities, with more assets at risk and more resources to devote to compliance, are more likely to engage in in-depth due diligence investigations into RIN validity than smaller, less sophisticated parties. Therefore, a scheme that eliminated many larger refiners and importers from the obligation to acquire RINs, and shifted RIN responsibilities to smaller entities such as many "position holders" and blenders, would be more likely to result in an increase, rather than a decrease in instances of RIN fraud. BP and others who do not favor a change in the point of obligation suggested that smaller parties who could become obligated if the point of obligation were changed may not have the capability to conduct due diligence to ensure that the RINs they acquire are valid. Once the relaxation of RIN verification occasioned by such a change in the point of obligation were noticed, the change could encourage the generation of fraudulent RINs.

III. Changing the Point of Obligation in the RFS Program Is Not Expected to Result in the Increased Production, Distribution, and Use of Renewable Fuels

We have discussed in the previous section several significant concerns about the impact changing the point of obligation would have on the RFS program. Given these concerns, and our overall obligation to implement the RFS program in a way that most fully achieves Congress's goal of increasing renewable fuel

use, the point of obligation should only be changed if it would be expected to lead to net benefits. As we discuss in this section, we do not believe that the record before us indicates that this is the case.

In their petitions submitted to the EPA requesting a change to the point of obligation in the RFS program the petitioners claim that changing the point of obligation could result in greater production, distribution, and use of renewable fuels in the United States. The petitioners suggest that changing the point of obligation could therefore reduce or even eliminate the need for the EPA to exercise our waiver authorities. The petitioners generally offer only theoretical arguments to support these claims. In this section we describe our evaluation of petitioners' claims that changing the point of obligation would increase the production, distribution, and use of renewable transportation fuels in the United States.

The use of the EPA's waiver authorities to reduce the required volume obligations from the statutory levels in recent years is primarily the result of the delay in the commercialization of cellulosic biofuels and resulting shortfall in cellulosic biofuel production volumes relative to the statutory targets. In addition to the shortfall in cellulosic biofuel production, the EPA also noted challenges associated with increasing the supply of renewable fuel to consumers associated with distribution and use of renewable fuels, particularly ethanol and biodiesel in its rule establishing the RFS standards for 2014-2016.

In their petitions, the parties requesting that the EPA change the point of obligation did not address how changing the point of obligation might impact the

shortfall in cellulosic biofuel production,[121] but instead narrowly focus on the impacts on the distribution and use of other renewable fuels, particularly ethanol and biodiesel that they believe would result from changing the point of obligation. The petitioners argue that changing the point of obligation could increase the supply of renewable fuel to consumers by increasing the blending infrastructure for renewable fuels, improving the retail pricing of fuel blends with higher renewable fuel content relative to those with lower renewable fuel content, and increasing the availability of transportation fuels with higher level blends of renewable fuels at the retail level.

After reviewing the petition submissions, other available data and letters opposing changing the point of obligation from companies and associations involved in the renewable fuel production, fuel distribution and renewable fuel blending industries,[122] and the many comments received on the proposed denial, we continue to believe that the benefits to renewable fuel blending claimed by the petitioners are highly unlikely to occur. As explained below, the data available to EPA does not indicate that changing the point of obligation would result in an increase in the infrastructure

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[121] Several petitioners and commenters did address this issue in their comments on the proposed denial of the petitions to change the Point of Obligation in the RFS program. These comments are addressed in Section III.F below.

[122] See Presentation from Murphy USA to EPA, August 16, 2016; Letter from RaceTrac to Administrator McCarthy, August 17, 2016; Letter from QuikTrip to Administrator McCarthy, August 17, 2016; Letter from Tim Columbus to Administrator McCarthy, August 15, 2016; Letter from Pilot Flying J to Administrator McCarthy, August 16, 2016; Letter from SIGMA and RFA to Congressmen Whitfield and Rush, June 30, 2016.

needed to blend renewable fuels at terminals or offer these fuels at retail stations, nor would it be expected to appreciably impact the price of renewable fuel blends at the retail level. While we have received comments from large renewable fuel producers[123] and associations representing renewable fuel producers[124] opposing changing the point of obligation, only a few renewable fuel producers or associations have expressed support for changing the point of obligation.[125] Some of the renewable fuel producers that supported changing the point of obligation appeared to do so conditionally, requesting that EPA consider factors such as increasing requirements for renewable fuel use and promoting predictability and stability for all sectors in our decision on the point of obligation.[126] Other renewable fuel producers acknowledged the potential concerns with changing the point of obligation while expressing the belief that changing the point of obligation could lead to positive outcomes, and concluded by simply requesting that the EPA consider a rulemaking process to receive stakeholder input on this issue.[127] Since renewable fuel producers would stand to gain from any RFS structural changes that would increase the distribution and use of renewable fuels, their general oppo-

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[123] Comments from REG on the proposed RFS standards for 2017 and the biomass based diesel standard for 2018 (EPA-HQ-OAR-2016-0004-3477).

[124] Letter from SIGMA and RFA to Congressmen Whitfield and Rush, June 30, 2016.

[125] For example, see comments submitted by Valero Renewable Fuels Company, EPA-HQ-OAR-2016-0544-0413.

[126] For example, see comments from Crimson Renewable Energy, EPA-HQ-OAR-2016-0544-0376.

[127] For example, see comments from AgriFuels, EPA-HQ-OAR-2016-0544-0210.

sition to a change in the point of obligation is significant.

Additionally, the EPA notes that the agency did not exercise the general waiver authority on the basis of inadequate domestic supply in establishing the 2017 RFS standards, and did not propose to do so for the 2018 standards. Thus, EPA established for 2017, and proposed for 2018 EPA, volume reductions that are attributable to insufficient production of cellulosic biofuel. We do not believe that this type of shortfall would be reduced or alleviated by a change in the point of obligation. Thus, the focus of the petitioners on potential impacts of a change to the point of obligation on distribution and use of renewable fuels such as ethanol and biodiesel is not even directed at the primary hurdles facing renewable fuel growth under the RFS program going forward. Finally, the United States Court of Appeals for the District of Columbia Circuit recently ruled that EPA's interpretation of the "inadequate domestic supply" portion of its waiver authority in developing the 2016 total renewable fuel standard was inappropriate, and that in the future EPA may only consider "supply-side factors: in assessing if an "inadequate domestic supply" of renewable fuel exists.[128] Therefore, to the extent that petitioners claim that a change in the point of obligation would overcome constraints in the distribution of renewable fuel from refiners, importers or blenders to consumers, or in the use of renewable fuel by consumers, it does not appear that this would lead to a difference in EPA's use of the inadequate domestic supply waiver authority under the direction EPA recently received from the DC Circuit.

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[128] See *Americans for Clean Energy v. Environmental Protection Agency*, No. 16-1005, Slip Op. 31-32 (D.C. Cir. July 28, 2017) ("*ACE*").

For these and other reasons, as discussed below, contrary to the petitioners' claims, the EPA believes that the production, distribution, and use of renewable transportation fuels is unlikely to be positively impacted by changing the point of obligation in the RFS program.

Before assessing the potential impacts on renewable fuel production, distribution, and use in the subsections that follow we first address the EPA's statutory authority to place the point of obligation on various suggested parties.

A. Some of the Proposed Changes to the Point of Obligation Are Inconsistent with the CAA

EPA believes that certain of the proposed changes to RFS point of obligation are inconsistent with the Clean Air Act. Although we note these inconsistences here, we emphasize that our denial of the petitions is not dependent on this legal analysis. For the reasons described elsewhere in this document, the EPA would deny the petitions seeking a change in the point of obligation even if it concluded that it had legal authority to enact the suggested changes.

In its petition for reconsideration, the Coalition recommends that the EPA move the point of obligation to "blenders and distributors" without addressing EPA's authority to do so consistent with CAA 211(o)(3). See Coalition Petition, p. 14. In its petition, the Coalition cites text from CAA 211(o)(2)(A)(iii) indicating that the regulations EPA establishes to implement the RFS program "shall contain compliance provisions applicable to refineries, blenders, distributors, and importers, as appropriate." The Coalition suggests that including "distributors" in this list of entities regarding which compliance provisions may be established would author-

ize the EPA to establish the point of obligation for compliance with the RFS annual standards on distributors. However, the Act includes a different provision specifically identifying the parties that may be required to comply with the annual percentage standards. CAA 211(o)(3) describes the requirement for the EPA to establish annual standards under the Act, and provides that "[t]he renewable fuel obligation . . . shall . . . be applicable to refineries, blenders, and importers, as appropriate."[129] Distributors are excluded from this list. Reading these two provisions together, EPA's interpretation is that it has authority to establish ancillary compliance provisions which apply to distributors, but it does not have authority to make distributors directly subject to the annual percentage standards.[130, 131]

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[129] CAA 211(o)(3)(B)(ii)(I).

[130] We believe that moving the point of obligation to distributors in addition to, or in the alternative to, blenders and "position holders," would result in imposition of the obligation on a large number of new parties, including small businesses. As discussed in Sections II.E. and IV, we believe that this would be a generally undesirable result, unless it could clearly be demonstrated that such a change would result in net benefits, potentially including the increased production, distribution and use of renewable fuels. However, for the reasons discussed elsewhere, including in Sections III.B.-E., we do not believe that this would be the case.

[131] EPA notes that the Coalition has moved away from this interpretation in its comments, and instead advocates that the definition of "obligated party" should be changed to obligate "position holders." In their comments on the RFS 2014-2016 final rule, they urged EPA to place the obligation on "position holders," Comments from Small Refiners Coalition Comments on Renewable Fuel Standard Program: Standards for 2014, 2015, and 2016 and Biomass-Based Diesel Volume for 2017, HQ-OAR-2015-0111-2339, and in the comments on the proposed denial, the Coalition also suggested that EPA define "obligated party" to include

A number of Petitioners and other commenters suggest that the point of obligation be placed on "position holders."[132] They explain that "position holders" may or may not be blenders, but they argue that because all "position holders" could be blenders, the EPA has the authority to impose the point of obligation on them. They propose that the "obligation [would attach] whether a party actually blends or not," and explains that their proposed definition of obligated party "does not even make actual blending critical."[133] In comments, Petitioners suggested that the EPA has broad authority to obligate "position holders" as a subset of blenders because they "control the point of blending." Commenters also suggested that the EPA could redefine "refiner" and "refinery" to include "position holders." Some commenters suggested that the EPA's past consideration of its authority to impose the point of obligation on downstream parties means the EPA must have the authority to regulate "position holders."

The EPA does not interpret CAA 211(o) as authorizing it to make "position holders" subject to the renewable volume obligation if they are not blenders, importers or refiners. EPA received comments from the Association of American Railroads, the American Trucking Association and UPS indicating that they or their members are not refiners, importers, or blenders, and yet would be obligated under the proposed definition

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"position holders." Comments from Small Refiners Coalition, HQ-OAR-2016-0544-0406, 5. In the alternative, the Coalition argues that EPA clearly has the authority to obligate all blenders. Ibid.

[132] In its petition, Valero uses the term "rack sellers" to represent those parties who own fuel above the rack. As mentioned above, we have chosen instead to use the term "position holders" to describe these parties.

[133] Valero Petition for Rulemaking, June 13, 2016.

of obligated party because they are "position holders."[134] A "position holder" may have authority to decide whether or not to blend renewable fuel into non-renewable fuel at a particular terminal, but EPA does not interpret the term "blender" in CAA 211(o) as describing anyone who is in a position to choose whether or not to engage in blending, but rather as describing those parties who actually engage in blending.[135] EPA also does not believe it would be appropriate to redefine the terms "refiners" and "importers" to include "position holders" who do not engage in any refining or importing. Such an approach would not be consistent with EPA's existing regulatory definitions or common industry usage. In sum, EPA does not interpret the CAA as authorizing it to place the point of obligation on all "position holders" or distributors, since they are not all refiners, importers or blenders. Of course, EPA does have authority to place the point of obligation on blenders (which would include the majority of the "position holders"), but for reasons discussed further below we continue to find it appropriate not to do so.

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[134] Comments from Association of American Railroads, EPA-HQ-OAR-2016-0544-0359; Comments from American Trucking Association, EPA-HQ-OAR-2016-0544-0355; Comments from UPS, EPA-HQ-OAR-2016-0544-0076.

[135] A decision to treat people as having engaged in an activity simply because they have the opportunity to engage in it would be quite unusual. For example, a landowner not making active use of their land would not normally be considered a "farmer" simply because they could decide in the future to engage in farming.

B. Renewable Fuel Production, Distribution, and Use Does Not Appear to Be Significantly Limited by Blending Infrastructure

One of the ways that the petitioners claim renewable fuel production, distribution, and use could be positively impacted by changing the point of obligation in the RFS program is by increasing the incentive for the installation and expansion of renewable fuel blending infrastructure, especially at terminals. The petitioners claim that the current point of obligation results in a number of parties that are either "naturally long on RINs," because they are obligated parties that blend renewable fuels at volumes above their RFS obligations (generally because they blend renewable fuel into more petroleum products than they refine or import), or because they blend renewable fuels but are not obligated parties under the RFS program. According to the petitioners and some commenters, these parties have an incentive to oppose the installation and expansion of infrastructure needed to increase the blending of renewable fuels into transportation fuel in an effort to restrict RIN availability and drive up RIN prices.[136] The EPA has investigated these claims and does not find them to be supported. We acknowledge that some parties may be hesitant to contribute financially towards the addition of new infrastructure at terminals to increase the availability of higher level blends of renewable fuels due to insufficient local demand for these fuels (in the case of E85) or previous investment in infrastructure to offer these blends outside of the terminal (in the case of biodiesel). As discussed further in Section III.C below, we do not

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[136] For example, see *Effects of Moving the Compliance Obligation under RFS2 to Suppliers of Finished Products*, NERA Economic Consulting, July 27, 2015.

believe the addition of such infrastructure would be likely to increase the availability of RINs to such a degree that it would appreciably impact the price of RINs. It is therefore highly unlikely that any opposition to additional blending infrastructure at terminals is driven by a desire to restrict RIN availability which could theoretically result in higher RIN prices.

The EPA spoke with several terminal owners/operators to assess the current status of renewable fuel blending infrastructure at terminals.[137] Currently all, or nearly all, terminals contain the necessary infrastructure for the onsite storage of ethanol and the blending of ethanol with gasoline. This infrastructure is generally used to blend petroleum blendstocks with 10% ethanol by volume to produce a finished E10 blend. Some terminals have invested in additional infrastructure, such as additional ethanol storage capacity and/or larger capacity lines and nozzles, to more readily accommodate the production of fuel blends that contain a higher proportion of ethanol, such as E85. Even without this additional infrastructure, however, all of the terminal owners/operators communicated to the EPA that they were capable of producing fuel blends that contain a higher proportion of ethanol with their existing equipment. They also expressed a willingness to make the relatively modest changes necessary to accommodate faster loading times[138] if the existing infrastructure resulted in loading delays for trucks at the rack. Based on these conversations, as

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[137] See Magellan Meeting Notes, December 16, 2015; Independent Fuel Terminal Owners Association meeting notes, January 8, 2016; Kinder Morgan meeting notes, January 22, 2016.

[138] Because most ethanol blending infrastructure is currently designed to produce E10 blends, producing higher level blends using the existing infrastructure can require longer loading times.

well as the comments received, EPA does not believe that blending infrastructure at terminals is a significant factor limiting the sale of higher level ethanol blends. EPA further notes that the preponderance of ethanol produced and used in the United States is conventional (non-advanced) ethanol, and since EPA determined that the implied statutory volume of 15 billion gallons of conventional fuel would be supplied in 2017 and has proposed a similar finding for 2018, that increases in ethanol distribution infrastructure does not appear necessary to attain the statutory volume targets for conventional and non-cellulosic advanced biofuels.

Biodiesel blending infrastructure at terminals is less universal than ethanol blending infrastructure, but substantially more blending occurs downstream of terminals for biodiesel as compared to ethanol. Production and use of biodiesel has been steadily increasing in recent years, and there is a paucity of evidence suggesting the lack of blending infrastructure poses an obstacle or constraint on further biodiesel use. In fact, biodiesel blending is well above the required volume. While we were unable to determine precisely what percentage of terminals have biodiesel blending infrastructure, the terminal owners/operators generally communicated that they were willing to install biodiesel blending infrastructure at terminals in situations where biodiesel is available and they could reasonably expect a return on these investments.[139] A review of publicly available information from OPIS suggests that approximately half of all terminals list prices for biodiesel and/or biodiesel blends.[140] This may

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[139] Magellan Meeting Notes, December 16, 2015.

[140] See OPIS Rack City List (http://www.opisnet.com/resources/rackcode.aspx#biodiesel). Approximation made by comparing

in fact under-estimate the actual availability of biodiesel blends at terminals as diesel fuel containing up to 5% biodiesel is not required to be labeled as a biodiesel blend.[141] In situations where biodiesel blending infrastructure is not present at terminals, other parties have invested in alternative blending infrastructure to produce biodiesel blends downstream of terminals, further increasing the availability of biodiesel blends. Several large truck stop chains, driven by a desire to offer their customers lower priced fuel, have invested in infrastructure at retail locations to provide biodiesel blends for that location, and in some cases at other nearby retail stations.[142] Similarly, "jobbers" may take diesel fuel from bulk terminals and blend it with biodiesel before subsequent distribution, providing another opportunity for biodiesel blending.[143] In these cases it is unclear what impact, if any, changing the point of obligation to "position holders" would have on the availability of biodiesel blends as the current regulations appear to be providing a substantial incentive for parties to invest in biodiesel infrastructure, both at terminals and at other downstream locations.[144] As noted earlier, the required vol-

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the number of cities for which OPIS lists gasoline and diesel prices to the number of cities for which OPIS lists biodiesel prices.

[141] See ASTM D 975.

[142] See National Biodiesel Board comments on 2017 Annual Standards Rule; Attachment 6 (EPA-HQ-OAR-2016-0004-2904).

[143] Ibid.

[144] However, changing the point of obligation to "blenders" would make every truck stop or fuel retailer that blends biodiesel subject to the RFS. This could result in a reduction in downstream blending of biodiesel (as these parties concluded it was no longer worthwhile to engage in blending), or else could bring a

ume of biomass based diesel for 2017 is twice the statutory minimum volume. To the extent that renewable fuel use may be currently constrained by insufficient blending infrastructure we do not believe that changing the point of obligation would result in the additional investments claimed by the petitioners, as many of the parties that would become obligated if the petitioners' requests were granted are already investing in blending infrastructure. While the EPA continues to believe that there may be parts of the country that have limited or no access to biodiesel or biodiesel blends, this is generally the result of the higher expense and logistical complications associated with transporting biodiesel or biodiesel blends long distances to areas with little or no local biodiesel production, rather than an inability or unwillingness to invest in the necessary blending infrastructure, either at or downstream of the terminals. Furthermore, such cases continue to decline as a result of the continuing investment in biodiesel distribution infrastructure.

The EPA received comments claiming that changing the point of obligation would likely increase investment in biodiesel blending infrastructure at terminals, and that this would lead to higher biodiesel use in the United States.[145] Commenters claim that the most cost effective point to blend biodiesel is at the terminal, but that currently obligated parties with sufficient RINs and/or unobligated blenders are blocking the installation of additional biodiesel blending infrastructure at terminals. If the point of obligation were changed, they argue that the equal obligations at the

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large number of small entities, with little relevant compliance experience, into the RFS program.

[145] See, e.g., comments submitted by Joe Jobe, President of Rockhouse Advisors, LLC, EPA-HQ-OAR-2016-0544-0271.

rack would result in greater investment in biodiesel blending infrastructure at the rack. In his comments Mr. Jobe, president of Rockhouse Advisors, argues that because most biodiesel blending currently takes place downstream by a relatively small number of large companies this allows these companies to realize significant profits by keeping biodiesel prices low and/or keeping D4 RIN prices high.[146] He further argues that the current point of obligation discourages domestic biodiesel by encouraging the import of biodiesel at a lower cost, and that moving the point of obligation could benefit domestic producers by moving the demand for biodiesel away from the coasts to the approximately 1,000 terminals around the country.

The EPA believes it is highly unlikely that the many claimed benefits to the biodiesel industry associated with changing the point of obligation would occur. All or nearly all of these claimed benefits are dependent on additional investment in biodiesel blending at terminals. However, as Mr. Jobe notes in his comments, the response to increasing RFS requirements for biomass-based diesel and advanced biofuel has primarily been to increase biodiesel blending capacity downstream of the terminals. This is likely occurring because the parties that are currently blending the majority of the biodiesel have determined that it is more cost effective to blend biodiesel downstream of the terminal, rather than at the terminal itself, and not because a small number of companies are exercising market power to reap excess profits. This is the case even though the majority of obligated parties (refiners and importers) are "position holders," and would stand to benefit by adding biodiesel blending

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[146] Ibid.

infrastructure at terminals if this were likely to result in lower cost compliance options. Further, Mr. Jobe does not present compelling evidence that the current price of biomass-based diesel RINs is the result of a relatively few large biodiesel blenders ability to artificially inflate RIN prices. Rather, the high price of biomass-based diesel RINs is generally the result of the relatively high cost of biodiesel production due to the high cost of the marginal feedstock (generally virgin soy oil) relative to petroleum diesel.[147]

If the EPA were to change the point of obligation to "position holders" it would result in increased obligations for many of the parties that currently sell gasoline and diesel at the rack, including both those that are currently obligated parties and those that are not.[148] Mr. Jobe claims this would increase the incentives for parties who sell gasoline and diesel at the rack to invest in biodiesel blending infrastructure at

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[147] According to USDA's August 25, 2017 National Weekly Ag Energy Round-up the price for crude soybean oil was approximately $0.34 per pound. Each gallon of biodiesel requires approximately 7.5 pounds of feedstock, which would result in a feedstock cost of approximately $2.55 per gallon of biodiesel produced from soy oil. According to the Energy Information Administration, the spot price for No. 2 ULSD on August 25 ranged from $1.59 - $1.73, depending on location. For biodiesel produced from soy oil (likely the marginal gallon of biodiesel) the feedstock cost alone is significantly greater than the wholesale cost of petroleum diesel, before considering other costs of production such as labor, energy, capital recovery, etc.

[148] Currently obligated parties could see their obligations increase if they may sell more fuel across the rack than they currently refine. Because the proposed change to the point of obligation would make the obligation proportional to the amount of fuel sold over the rack, this could result in an increase for rack sellers in this position.

the rack, as they would now all be "RIN-short" and would need additional RINs to meet their RFS obligations.[149] However, if the majority of the biodiesel blending (and thus BBD RIN separation) is currently occurring downstream of the rack by parties such as truck stop owners with little to no RFS obligations, as claimed by the commenters and supported by the data they present, this strongly implies that most obligated parties currently selling gasoline and diesel at the rack are already "RIN-short" with respect to biomass-based diesel RINs and must obtain at least some portion of their required BBD RINs through purchasing separated RINs.[150] It follows that because most parties that sell gasoline and diesel at the rack are likely RIN-short with respect to their biomass-based diesel obligations, that terminals should already have a significant incentive to add biodiesel blending infrastructure. There are two cases in which this would not be true; if purchasing separated RINs from the large unobligated blenders is a more cost effective way of

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[149] Mr. Jobe's comment also appears to assume increasing RFS standards that would require obligated parties to continue to increase renewable fuel blending in subsequent years. If the standards do not increase substantially there would be no incentive to expand renewable fuel distribution infrastructure beyond what already exists, as using existing infrastructure is more cost effective than installing new infrastructure.

[150] While the IRS data assessed by EPA indicates there are a large number of "position holders" that are currently not obligated parties, the data also indicates that these non-obligated "position holders" are responsible for a very small volume of the gasoline and diesel sold at terminals (see further discussion in Sections IV.A and IV.B). Therefore, in light of the considerable biodiesel blending that occurs downstream from terminals, it is reasonable to assume that the gasoline and diesel sold at terminals is by parties that are generally "RIN-short" with respect to biomass-based diesel RINs.

acquiring D4 RINs than adding biodiesel blending infrastructure at the terminal, or if the unobligated blenders are sufficiently able to block the installation of the necessary infrastructure. If the former is the case, it appears unlikely that changing the point of obligation will cause parties to choose a more expensive compliance option. If instead unobligated blenders are able to block the installation of the necessary infrastructure to blend biodiesel at terminals, it seems unlikely that changing the point of obligation will cause the large downstream blenders to abandon their presumably profitable downstream blending operations in favor of participating in infrastructure investments at the rack.

Even if changing the point of obligation were to increase biodiesel blending infrastructure at terminals, the benefits to domestic biodiesel producers that Mr. Jobe claims would result seem highly unlikely. Additional blending infrastructure at terminals would not cause biodiesel blenders to suddenly purchase higher volumes of domestic biodiesel if imported biodiesel continues to be available at lower prices. Demand for biodiesel is much more likely to be impacted by the price of biodiesel (relative to petroleum based diesel) than the availability of blending infrastructure at terminals. As long as significant volumes of low cost imported biodiesel are available we anticipate imported biodiesel will preferentially be purchased and blended over higher priced domestic product, particularly near large ports. In this scenario, obligated parties that sell significant volumes of fuel in the interior of the United States would likely purchase separated RINs to meet their compliance obligations, rather than purchasing and blending relatively high cost domestic biodiesel.

Based on the above information, it appears that renewable fuels and renewable fuel blends are currently widely available across the United States. Ethanol is available at all or nearly all terminals and while much of the blending infrastructure may not currently be optimized to produce higher level ethanol blends, it is capable of such optimization. Biodiesel blending infrastructure is more varied, with many terminals having blending infrastructure on-site, some receiving pre-blended biodiesel, and much biodiesel being blended downstream of terminals. Where biodiesel blending infrastructure does not exist we believe it is primarily the result of the higher expense associated with transporting biodiesel to locations with limited or no local biodiesel production.

In any case, we do not believe that the lack of proper incentives to expand blending infrastructure is a primary factor limiting the production or use of renewable fuels in the transportation sector. While blending infrastructure is not universal at all terminals, the primary issues limiting the production and use of renewable fuels are the status of the production technologies to economically produce cellulosic fuels and to a lesser degree the limited consumer demand for higher level ethanol blends.[151] Given the observed sufficiency of blending infrastructure, and the apparent ability of the current regulatory program to incentivize installa-

[151] While low consumer demand for higher level ethanol blends did not require the use of EPA's general waiver authority to reduce the implied statutory volume of conventional biofuel in 2017, or in EPA's proposed rule for 2018, low demand for these fuels could theoretically result in higher RIN prices than would be realized if consumer demand for these fuels were greater. However, as discussed throughout this document, the record before EPA does not demonstrate that changing the point of obligation is likely to result in greater sales volumes of higher level ethanol blends.

tion of blending infrastructure (whether at or downstream of fuel terminals), the record before us does not support the allegations of petitioners that changing the point of obligation would result in increased use of renewable fuels in the United States as a result of additional incentives or motivation for the installation of blending infrastructure.

C. Changing the Point of Obligation Is Not Expected to Significantly Impact the Retail Pricing of Fuel Blends with High Renewable Content

One of the factors that could affect the expansion of renewable fuel use in the United States, identified both by the EPA in prior actions and by the parties requesting a change to the point of obligation, is the retail pricing of fuel blends that contain higher concentrations of renewable fuel, such as E85.[152] This is primarily an issue for fuels blended with ethanol. Biodiesel blends tend to be offered at a discount to petroleum based diesel fuel and this discount, which is significantly enabled by the value of the RINs associated with the biodiesel and the biodiesel blenders' tax

[152] As discussed in Section II.A, the EPA believes that at this time the primary factor constraining attainment of the statutory volume targets is the shortfall in cellulosic biofuel production. EPA did not base the reduced volumes used in establishing the 2017 RFS standards, or the proposed 2018 RFS standards, on any perceived limitation in the ability to distribute or sell E85, and at this time we have no basis for expecting that this limitation would impact future waiver decisions. However, if changing the point of obligation were to lead to the market selling greater volumes of higher level ethanol blends (such as E85 or E15) at lower prices this could potentially reduce the price of D6 RINs, which is perceived by the petitioners as advantageous.

credit,[153] is regularly large enough to offset the very small impacts that biodiesel blends have on fuel economy. Retailers have often noted the ability to offer biodiesel blends at a discount to petroleum diesel fuel, and the consumer demand for lower priced biodiesel blends, as a primary reason for offering these fuels for retail sale.[154] The relatively high degree of competition among diesel fuel retailers and favorable pricing for biodiesel blends, together with the RFS mandates, are contributing to increasing demand for biodiesel blends and growth in biodiesel production, distribution, and use well beyond the statutory volumes. Consequently, available evidence strongly suggests that the RFS program, in conjunction with other incentives for biodiesel, have been very effective in increasing the supply of biodiesel.

The current retail availability and pricing for E85, however, is significantly different. E85 is currently offered for sale at approximately 3200 stations across the United States (approximately 2% of all retail fuel stations).[155] The low energy density of E85, relative to E10, means that consumers must purchase a significantly greater volume of E85 than E10, and refill their fuel tanks more frequently, to travel the same distance. While some individual stations have offered

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[153] The $1/gallon biodiesel blenders tax credit has been available every year from 2010-2016 (in some years the tax credit was reinstated retroactively). Currently, this tax credit is not available for 2017.

[154] Letter from Pilot Flying J to Administrator McCarthy, August 16, 2016.

[155] E85 station count from the U.S. Department of Energy Alternative Fuels Data Center Alternative Fueling Station Locator. Available online at http://www.afdc.energy.gov/locator/stations/

E85 at a price that more than accounts for the difference in energy density between E85 and E10, this favorable pricing is not generally applicable across the United States.[156] This is despite the fact that in 2015 the relative prices of gasoline blendstocks, ethanol, and D6 RINs, as well as the limited wholesale E85 pricing information available, suggested that E85 could be offered at a price discount greater than the energy content difference between E85 and E10.[157] In a supporting document for the final rule establishing the RFS percentage standards for 2014-2016, the EPA examined the potential for higher RFS standards, and the higher RIN prices that could be expected as a result of higher standards, to incentivize lower E85 retail prices and higher sales volumes.[158] In this document we concluded that a lack of competition among E85 retail stations limited the ability for RIN prices to effectively impact retail E85 prices, ultimately limiting the ability of the RFS standards to incentivize a significantly greater supply of E85 to consumers in the near term.

In their requests to change the point of obligation of the RFS program, the petitioners argue that if the EPA changed the point of obligation the RFS standards would have a greater ability to impact the retail price of E85 and incentivize greater use of this fuel. In

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[156] See E85 pricing information available at E85prices.com. E85 generally requires a minimum 22% price discount relative to E10 to be an equal cost fuel for consumers on a cost per mile traveled basis.

[157] See discussion in the final rule establishing the RFS standards for 2014-2016 (80 FR 77,420, Dec., 14, 2015).

[158] "An Assessment of the Impact of RIN Prices on the Retail Price of E85," Dallas Burkholder, Office of Transportation and Air Quality, US EPA. November 2015.

comments, petitioners and others suggested that obligating downstream parties like "position holders," and increasing obligations for currently RIN-long parties, could result in more price discounting. We find no basis for the claim that changing the point of obligation would have this effect, nor did commenters submit any data that would support this conclusion. Rather we believe changing the point of obligation would be unlikely to impact the retail pricing of E85. We believe the primary factors inhibiting the RFS program from significantly increasing the supply of E85 to consumers are the limited number of retail stations selling E85 and the relative pricing of E85 versus E10. Further, we believe that the generally non-competitive pricing of E85 at retail is not due to the pricing of E85 at the wholesale level, but is instead the result of the non-competitive retail market for E85. This non-competitive market often results in a not unexpected E85 pricing strategy by retail stations that seeks to maximize fuel margins through withholding RIN value and leading to greater profitability, rather than a strategy that seeks to maximize sales volumes through lower retail prices by passing a greater portion of the RIN value through to consumers. Changing the point of obligation to renewable fuel blenders or "position holders" at the rack is not expected to affect these underlying market fundamentals at retail stations.[159]

One of the arguments made by the petitioners, in their petitions and in comments, for changing the point of obligation in the RFS program is that the

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[159] Even if EPA changed the point of obligation to "position holders" retail station owners would generally not be obligated parties, and thus the change is unlikely to directly impact retail fuel pricing decisions.

current point of obligation creates a disincentive for parties with excess RINs (un-obligated blenders and parties that sell more gasoline and diesel fuel blended with renewable fuel than they refine or import) to increase the use of renewable fuels by offering fuel blends with high renewable content at attractive pricing. They argue that because these parties profit from selling RINs they are incentivized to keep the RIN prices as high as possible by restricting the blending of additional renewable fuel and/or pricing fuels with higher renewable content such as E85 at levels that are unattractive to consumers, thereby restricting the supply of RINs. According to the petitioners, if the EPA were to change the point of obligation in such a way that RFS obligations were proportional to the volume of gasoline and diesel fuel that a party blends with renewable fuel and/or sells at the rack, rather than the volume of gasoline and diesel a party refines or imports, these parties would have a greater incentive to pass the RIN value through to retail station owners, who would then pass the value on to E85 consumers, ultimately reducing the retail price of E85 and increasing E85 sales.

The EPA believes this argument is flawed. Because parties that blend renewable fuels or sell fuel at the rack cannot dictate the retail price of the fuels they sell (unless they also own the retail stations), changing the point of obligation of the RFS program would only be expected to directly impact the wholesale pricing of fuels such as E15 and E85. While some of the parties (blenders or position holders) that would become obligated if the EPA were to change the point of obligation as suggested in the petitions own retail stations, many do not. Parties that do not own retail stations, or own very few, primarily impact the retail price of E85, or any fuel, through the prices at which they offer the fuel

at the wholesale level. Wholesale pricing data for E85 are currently very limited. However, what information is available, such as the wholesale E85 pricing published by the Iowa Renewable Fuels Association, shows that in Iowa the wholesale price of E85 already largely reflects the discount enabled by the RIN value associated with this fuel (See Figures 2 and 3 below for wholesale pricing for E85 and E10 in Iowa).[160] This is consistent with letters EPA has received from fuel blenders who told the EPA that it is their practice to price all the fuel they sell at the wholesale level, including E85, at a level that reflects the discount enabled by the RIN value in an effort to offer competitively priced fuel.[161] The petitioners and commenters did not provide compelling evidence to suggest that a significant portion of the RIN value was being withheld by the wholesale providers of E85. If the RIN value is already being largely reflected in the wholesale price of E85, changing the point of obligation to parties that determine the wholesale pricing of E85 would not be expected to result in improved pricing of E85 at the wholesale level.

Even if changing the point of obligation as requested by the petitioners were to result in improved pricing of

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[160] This finding conflicts with the paper prepared by NERA on behalf of Valero (Effects of Moving the Compliance Obligation under RFS2 to Suppliers of Finished Products), however we note that NERA provides no data to support their claim that the value of the RIN is not reflected in the wholesale price of E85. Instead, they simply refer to the fact that the full value of the RIN is not reflected in the *retail* price of E85.

[161] See Letter from Tim Columbus to Administrator McCarthy, August 15, 2016; Letter from QuikTrip to Administrator McCarthy, August 17, 2016; Letter from RaceTrac to Administrator McCarthy, August 17, 2016.

E85 at the wholesale level, we believe it is highly uncertain that this would result in improved pricing at the retail level. If pricing for E85 at retail stations does not improve, the constraint on E85 supply to consumers attributable to retail pricing will not be remedied, hindering the likelihood that sales volumes of E85 will increase significantly. The majority of retail stations (56.6%) are owned by parties who own only a single store.[162] These parties rarely, if ever, blend their own fuel or purchase fuel above the rack and therefore will not become obligated parties even if the point of obligation is changed as requested by the petitioners. They would therefore have no more of an incentive to offer E85 at discounted pricing than they do currently. Information reviewed by the EPA for the state of Iowa shows that even in situations where E85 is available at a significant discount to E10 at the wholesale level, the retail pricing of E85 does not reflect this discount.

The data on wholesale and retail pricing of E85 in Iowa, shown in Figures 2 and 3 below, strongly suggest that the relatively small observed discount for E85 relative to E10 at the retail level is not a result of there being a small discount between these fuels at the wholesale level, and would not necessarily be expected to be improved by changing the point of obligation. The average retail price discount for E85 relative to E10 in Iowa was very similar to the national average retail price discount. The average discount for E85 relative to E10 in Iowa at the retail level, however, was much smaller than the average discount for E85 relative to E10 at the wholesale level (See Figure 3 below). Further, the average retail price discount for E85 was less than the discount needed to make up for the lower

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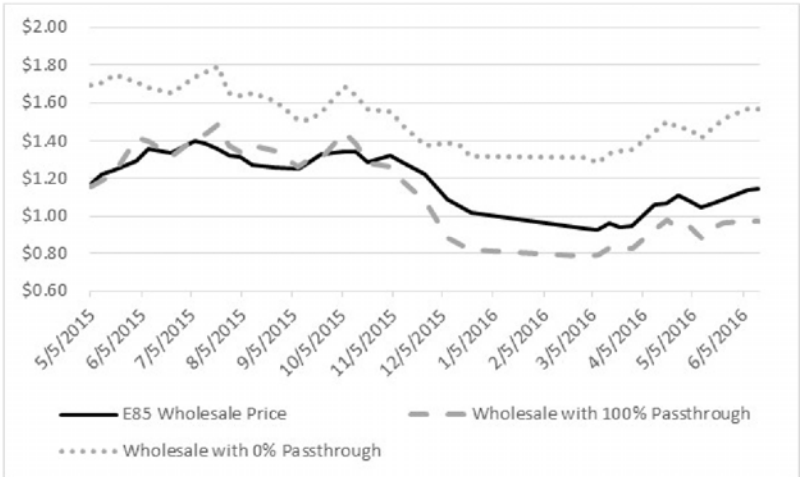
[162] http://www.nacsonline.com/YourBusiness/FuelsReports/GasPrices_2013/Pages/WhoSellsGas.aspx

energy content per gallon of E85 relative to E10 (approximately 22%) during much of this time period. If the wholesale E85 pricing data collected in Iowa are representative of the wholesale pricing for E85 nationwide, which we believe is likely, then the wholesale prices for E85 already reflect the majority of the RIN value and there is very little to no additional RIN value to be passed through at the wholesale level. Even if the nationwide wholesale E85 pricing generally does not reflect the RIN value, and changing the point of obligation could improve the pricing of E85 at wholesale, the data collected from Iowa suggest that significant discounts at the wholesale level would not necessarily be expected to be passed on to the retail level. The available data further support the view that changing the point of obligation in the RFS program is unlikely to result in a greater portion of the RIN value being reflected in the wholesale price of E85, and ultimately the retail price of E85, and will not be an effective mechanism for increasing E85 sales volumes.

Figure 2

Observed vs. Theoretical E85 Wholesale Price in Iowa

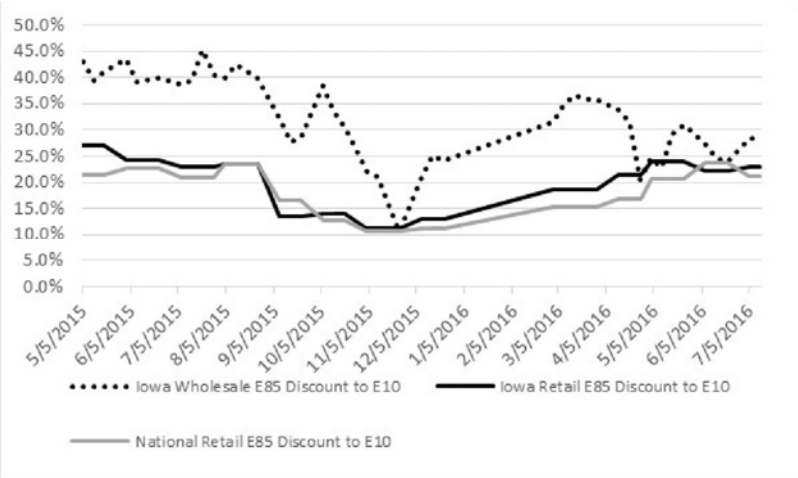


Wholesale prices with 100% and 0% pass-through calculated using E10 and ethanol prices from the following sources and assuming the effective ethanol price is discounted by 100% and 0% of the RIN value respectively E85 and E10 wholesale prices are the average price of all wholesale sellers reported by the Iowa Renewable Fuel Association (Available online at http://iowarfa.org/retailer-center/iowa-wholesale-e85-price-listing-services/) Ethanol price from Agricultural Marketing Resource Center (http://www.agmrc.org/renewable-energy/ethanol/midwest-ethanol-cash-prices-basis-data-and-charts-for-selected-states/)

RIN Prices from OPIS and Argus Media

Figure 3

E85 Pricing: Iowa Wholesale and Retail Price and National Retail Price Averages



E85 and E10 wholesale prices are the average price of all wholesale sellers reported by the Iowa Renewable Fuel Association (Available online at http://iowarfa.org/retailer-center/iowa-wholesale-e85-price-listing-services/) National and Iowa E10 and E85 average prices (used to calculated the national and Iowa discounts for E85 relative to E10) obtained from E85 prices.com

Further, the petitioners rely on a faulty assumption when they argue that un-obligated blenders are incen-

tivized to restrict RIN availability (by restricting renewable fuel blending) in an effort to keep RIN prices high. They assume that the overall price of RINs could be significantly reduced as a result of the increase in the supply of RINs that they claim would result from a greater proportion of the discount enabled by the RIN value being reflected in the retail price of E85.[163] The petitioners provide insufficient evidence to support this argument. In fact, some of the comments that EPA received supporting a change to the point of obligation concede that the market for ethanol is highly inelastic due to the limited demand for E85 and other higher level ethanol blends.[164] The EPA estimates that total E85 sales were approximately 150 million gallons in 2014. In our final rule establishing the RVOs for 2014-2016, the EPA estimated, based on available E85 price and sales volume data, that even if E85 were to be sold at retail at a 50% discount to E10 on a nationwide level, a discount more than twice the current national average, E85 sales would still be expected to remain low, just under 300 million gallons.[165]

Even if we assume an optimistic scenario, that if parties that are able to acquire excess RINs with the current point of obligation were able to double E85

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[163] In this section EPA has primarily focused on E85, rather than other ethanol blends such as E15 or E30. This is in response to the petitions we have received, which generally focus on E85. Further, there is much more market experience with E85, relative to E15 or E30, better allowing for the types of analyses shown here.

[164] For example, see comments submitted by NATSO, EPA-HQ-OAR-2016-0544-0282; Chevron, EPA-HQ-OAR-2016-0544-0209

[165] 80 FR 77,420 (Dec., 14, 2015).

sales to 300 million gallons per year by passing through a greater proportion of the RIN value, this would represent an opportunity to generate an additional 110 million RINs per year,[166] or approximately one half of one percent of the total number of RINs generated in 2016. We believe this number provides a perspective on the likelihood that the additional RINs that might be able to be generated by additional sales of E85 would significantly reduce the overall price of RINs. Additionally, in 2016 approximately 240 million D6 RINs were supplied from grandfathered biodiesel and renewable diesel.[167] It is very likely that these were the marginal cost D6 RINs as the RIN price associated with these fuels is governed by the high price of feedstocks used to produce these fuels relative to petroleum. Even if additional RINs could be generated by supplying greater volumes of E85, these additional RINs would only be expected to appreciably reduce the D6 RIN price after displacing these marginal conventional biodiesel and renewable diesel RINs. Since petitioners and commenters provide insufficient information to demonstrate that changing the point of obligation would result in enough additional low cost D6 RINs to displace the high cost D6 RINs currently provided by conventional biodiesel and renewable diesel, the claim that potential additional RINs generated from increased E85 blending would depress the overall D6 RIN price is unsupported.

If any additional RINs supplied to the market through increased sales volumes of E85 are not

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[166] An additional 150 million gallons of E85 contain approximately 110 million gallons of ethanol (assuming an average ethanol content of 74% for E85) and would therefore generate approximately 110 million RINs.

[167] See *2016 RIN Supply*.

expected to significantly reduce the market price of RINs, then any parties that profit from E85 and/or RIN sales would maximize their profit by selling as much E85 (and the associated RINs) as possible. This appears to be the case in the current marketplace; parties currently separating RINs in excess of their RFS obligations are seeking to acquire as many RINs as possible as long as the cost of doing so is less than the value they can recover through the sale of the RIN. Although the EPA does not believe that RIN sales by un-obligated blenders lead to windfall profits, to the extent petitioners believe otherwise their own logic would suggest that these parties should currently be incentivized to undertake efforts to increase the sale of renewable fuel blends to increase the number of RINs sold at a profit. If this were the case, changing the point of obligation to blenders could therefore reduce such sales, since blenders would retain RINs for compliance, thereby removing an incentive for them to increase renewable fuel sales and profits.

In summary, the EPA does not find the arguments made by the petitioners compelling, as they do not address what we believe to be the fundamental challenges to significantly increasing the use of renewable fuels in the near term. As discussed in previous sections, the evidence available to the EPA does not indicate that changing the point of obligation would result in greater availability or price discounts for cellulosic biofuels or biodiesel blends. With respect to higher level ethanol blends, supply of E85 to consumers is currently inhibited by the number of retail stations selling E85, the geographic distribution of these stations, and the relative pricing of E85 versus E10 at the retail level. For the reasons discussed in this section, it appears highly unlikely that changing the point of obligation would influence the relative pricing of E85

versus E10. In the next section, we discuss why the EPA does not believe that data support the position that changing the point of obligation would increase the availability of E85 at retail stations.

D. Changing the Point of Obligation Is Not Expected to Significantly Impact the Availability to Consumers of Fuel Blends with Higher Renewable Content

In requesting that EPA change the point of obligation in the RFS program, some parties argue that this would result in an increase in the number of retail stations offering higher level blends of renewable fuel such as E85. They generally argue that the renewable fuel blenders and/or "position holders" have greater influence over the decisions made by the retail station owners, either through direct ownership or through contractual relationships. The petitioners and others argue that if the EPA were to place the point of obligation on the blenders or "position holders," they would use their influence with their retail partners to increase the number of stations offering fuel blends such as E85 in an effort to increase their access to the RINs needed for compliance.

While this argument is generally consistent with the principle that the closer the point of regulation is to the party whose behavior the regulation is intended to impact (in this case the retail station owner) the more effective the regulation is, in this case it ignores the complicated relationships that exist in the fuels marketplace as well as observations from the current marketers of E85. Currently less than 0.5% of all fueling stations are owned by a major oil company, while approximately 50% are branded stations, selling

fuel under the brand of a refiner.[168] It is unlikely that blenders and "position holders" would be more effective at encouraging retail stations to offer E85 than the refiners and importers of gasoline and diesel fuel who are affiliated with these stations. This is especially true for the nearly 60% of retail stations owned by single-store owners who are likely to face difficulties raising the capital required to install the equipment necessary to enable the sale of these fuels.[169]

The EPA also assessed the current affiliation of stations selling E85 in the proposed denial. The EPA received several comments on that assessment, including one that provided an updated assessment of E85 station affiliation information. EPA has used the information provided in that comment in the revised assessment presented below.[170]

Using the information presented in the comments, we find that of the approximately 3200 stations selling E85 in the United States at the end of 2016, approximately 40% of them were branded stations (stations affiliated with a refiner) despite the fact that approximately 50% of all retail fuel stations are branded. Conversely, approximately 47% of all stations selling E85 were not affiliated with an obligated party, 10% were private stations or stations owned by a federal, state,

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[168] http://www.nacsonline.com/YourBusiness/FuelsReports/GasPrices_2013/Pages/WhoSellsGas.aspx

[169] Ibid.

[170] Letter from Ron Minsk to Sarah Dunham. February 22, 2017. Submitted as an attachment to comments from Valero, EPA-HQ-OAR-2016-0544-0274.

or local organization,[171] and 3% were unable to be categorized.[172] Large retail chains, such as Casey's General Stores, Kwik Trip, and Murphy USA, as well as other unbranded stations are not generally obligated parties under the current regulations.[173] These data do not appear to support claims that moving the point of obligation in the RFS program would result in a greater number of stations selling fuels with higher levels of renewable fuel, such as E85. While there are differences of opinion on the degree to which obligated parties can influence whether or not their branded stations offer E85, if it were the case that an RFS obligation made a party more effective in encouraging their affiliated retail stations to offer fuels containing higher levels of renewable fuel such as E85 we would expect that the stations affiliated with parties with an obligation under the current RFS regulations would have proportionally more stations offering E85 than parties who are not affiliated with a party with an RFS obligation. Instead, we find that while 50% of all retail fuel stations are branded (affiliated with a refiner), only 40% of all stations that sell E85 are branded sta-

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[171] The 10% of E85 stations that were private or owned by a federal, state, or local organization are not included in the 47% of E85 stations not affiliated with an obligated party.

[172] These numbers are based on an assessment of data from AFDC by Ron Minsk, submitted in comments on our proposed denial of the petitions, EPA-HQ-OAR-2016-0544-0145.

[173] Large retail chains could become obligated parties for all or a portion of the petroleum products they sell if the point of obligation were changed to the renewable fuel blender or the "position holder." These parties purchase fuel above or below the rack depending on the logistics and economics of fuel purchasing and renewable fuel blending at various locations. See, e.g., Comments from Casey's General Stores, EPA-HQ-OAR-2016-0544-0268.

tions.[174] In contrast, large retail chains often directly own retail stations, thus giving them control of the fuel offerings at the stations they own, and a significantly higher proportion of these stations offer E85 relative to branded stations, as shown below; this suggests that the current point of obligation provides significant incentives for these stations to offer E85 under the right market conditions.

[174] This number increases to 46% percent of all E85 stations affiliated with obligated parties (vs.54% of all E85 stations not affiliated with obligated parties) if we consider only public stations

Table III.D-1

Retail Fuel Stations and E85 Stations by Affiliation

	Branded Stations (affiliated[175] with obligated parties)	Unbranded Stations (not affiliated with obligated parties); Not including private stations	Private Stations	Uncategorized Stations
All Retail Fuel Stations[176]	50%	50%	Unknown	N/A
E85 Retail Stations	40%	47%	10%	3%

Furthermore, while only 50% of all retail fuel stations are not affiliated with refiners, approximately 57% of all E85 stations are not affiliated with refiners. An unbranded station is therefore approximately 17%

[175] For the purposes of this assessment, EPA has defined a station as affiliated with an obligated party (or a non-obligated party) if they use the party's name for marketing purposes, such as in the name of the station, on the station signage, etc. Affiliated stations may or may not be directly owned by the party with which they are affiliated.

[176] EPA does not have data on the total number of private retail fuel stations in the United States, however it is likely that it is sufficiently small that it does not impact this analysis.

more likely to offer E85 for sale than a branded station if we exclude consideration of private unbranded stations.[177] Unbranded station are approximately 42% more likely to offer E85 for sale than a branded station if we include private stations in the count of unbranded stations that sell E85.[178] Parties requesting a change in the point of obligation in the RFS program have claimed that such a change would result in an increasing number of retail stations offering E85 for sale. The data does not bear this out, as E85 is offered for sale at a higher rate at unbranded retail fuel stations relative to retail fuel stations that are affiliated with obligated parties. The record before EPA does not contain sufficient evidence to demonstrate that the point of obligation is a significant factor in a retail station's decision whether or not to offer E85.

In his critique of the EPA's assessment of the number of E85 retail stations as branded as compared to

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[177] Since the number of branded and unbranded stations are approximately equal, we determined that unbranded stations are approximately 17% more likely to offer E85 than branded stations by dividing the percentage of E85 stations that are unbranded by the percentage of E85 stations that are branded. This calculation was then repeated when including the percentage of private E85 stations with the percentage of unbranded E85 stations.

[178] Some parties have used this information to argue that refiners are actively discouraging the installation of E85 infrastructure at their branded stations in an effort to discourage renewable fuel penetration. In examining the data from AFDC, however, EPA notes that the majority of the E85 stations at unbranded fuel retail stations are owned by large companies, rather than single store owners. We believe that the greater access to capital that the stations owned by large companies have relative to single store owners is likely to be a larger factor in the higher rate of adoption of E85 infrastructure at unbranded stations than any influence by refiners or the RFS point of obligation.

unbranded stations presented in the proposed denial, Mr. Minsk argued that in addition to errors in categorization, the comparison presented by the EPA (comparing E85 stations counts at branded vs. unbranded stations) was inappropriate. Mr. Minsk argues that it is more informative to compare the number of E85 retail station affiliated with obligated parties that are "RIN-long" vs. those affiliated with obligated parties that are "RIN-short."[179] Mr. Minsk concludes E85 stations are much more likely at retail station affiliated with RIN-short obligated parties, with E85 offered at 2.7% of all stations affiliated with RIN-short parties (893 out of an estimated total of 31,000 stations), as compared to E85 being offered at 0.9% of all stations affiliated with RIN-long parties (368 out of an estimated 41,000 stations). When focusing only on stations added since 2013, when D6 RIN prices first rose significantly, E85 was added at 460 stations affiliated with RIN-short parties (1.5% of their total of 31,000 stations) while 125 stations affiliated with RIN-long parties added E85 (0.3% of their 41,000 affiliated stations).[180] Mr. Minsk suggests this is evidence that RIN-short

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[179] In his paper, Mr. Minsk categorizes obligated parties as RIN-long vs. RIN-short primarily based on the volume of gasoline and diesel the obligated parties produce relative to the estimated volume of fuel sold at their associated retail stations. For more detail, see Letter from Ron Minsk to Sarah Dunham. February 22, 2017. Submitted as an attachment to comments from Valero, EPA-HQ-OAR-2016-0544-0274.

[180] EPA questions Mr. Minsk's focus on stations added since 2013. While it is true that D6 RIN prices rose substantially in this year, it is certainly possible that obligated parties could have anticipated that increasing demand for RINs, and associated higher RIN prices, would result from the rapidly increasing RFS statutory volumes. E85 stations added prior to 2013 therefore may have been in response to expectations of higher demand for RIN (and associated higher RIN prices) in the future.

parties are more effective at encouraging the availability of E85 at retail stations they are affiliated with, and that moving the point of obligation to the "position holders" (and, if EPA were to set an RVO that effectively requires higher level ethanol blends, thereby eliminating the ability for some parties to obtain the RINs needed for compliance by simply bending 10% ethanol with the gasoline they sell at terminals) would result in more retail stations offering E85, and therefore greater sales volumes of ethanol.

The conclusions reached by Mr. Minsk, however, are not sufficiently supported by the data. First, Mr. Minsk's assessment appears incomplete, as it does not address the majority of the E85 stations (E85 stations not affiliated with any type of obligated party, and therefore affiliated with parties that are by definition "RIN-long" due to their lack of an RFS obligation) despite the fact that these stations outnumber stations affiliated with obligated parties. EPA further notes that Mr. Minsk does not convincingly address the source of motivation that the "RIN-short" obligated parties may have for encouraging their affiliated stations to offer E85. As discussed above, the potential market for E85 is not sufficient to generate enough RINs to drive down the price of D6 RINs. This is especially true as a high RIN price is currently necessary to incentivize E85 sales, and the D6 RIN price is likely currently determined by the marginal gallon of conventional biofuel which we believe is currently conventional biodiesel rather than ethanol sold as E85. If increasing the number of retail E85 stations is unlikely to result in lower D6 RIN prices it is reasonable to question whether there are other factors, unrelated to whether an E85 station is affiliated with a RIN-long or RIN-short obligated party, that may explain why E85 is more likely to be offered at branded stations

affiliated with some obligated parties that others. After reviewing the data EPA concludes that retail stations owned by a large company are much more likely to offer E85 than retail stations owned by a party owning a single, or small number of retail, regardless of whether the station is affiliated with a RIN-long or RIN-short obligated party or if the station is branded or not. We do not find this surprising, as installing E85 infrastructure is a capital intensive project and therefore much more likely to occur at stations with significant access to capital (such as stations owned by large companies) rather than at stations owned by single-station owners. We further conclude that the higher prevalence of E85 stations affiliated with RIN-short parties (vs. RIN long parties) is the result of a higher rate of direct ownership of retail stations among RIN-short obligated parties, rather than a desire by RIN-long obligated parties to restrict the availability of D6 RINs.

The four parties categorized by Mr. Minsk as RIN-long (BP, Chevron, Shell, and Exxon) directly own an estimated total of just 458 stations out of the approximately 41,000 affiliated stations.[181] Conversely, direct ownership of retail stations is more common among the parties characterized by Mr. Minsk as RIN-short. Through its Speedway brand Marathon directly owns 2,730 retail stations, substantially more than all of the RIN-long parties combined.[182] Similarly Western

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[181] NACS. Who sells America's Fuel? Available online at: http://www.nacsonline.com/YourBusiness/FuelsReports/GasPrices_2013/Pages/WhoSellsGas.aspx

[182] https://www.speedway.com/About/ The vast majority of the stations affiliated with Marathon that offer E85 (321 out of 367) are Speedway stations, See *EPA assessment of E85 stations affiliated with Marathon*.

Refining and MAPCO directly own most or all of their affiliated stations.[183] While Valero does not currently own many retail stations, the vast majority of the stations affiliated with Valero that offer E85 are owned by CST, a large company that owns approximately 3,000 retail stations.[184] Additionally, a relatively large number of the stations affiliated with Valero (43 of 107) added E85 prior May 2013 when Valero spun off its retail operations to CST brands, meaning these stations may have been directly owned by Valero at the time they added E85.[185] Altogether, of the 893 E85 stations affiliated with RIN-short obligated parties we estimate that over 500 of these stations are directly owned by a RIN-short obligated party or a large retail brand formerly owned by a RIN-short obligated party.[186] Note that this is a higher number of stations than directly owned by all of the RIN-long parties combined.

Apart from whether a retail station is owned by a large company or a party owning a single or small number of stations, there are other factors that likely influence whether or not stations offer E85. For exam-

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[183] See http://www.wnr.com/about-us and https://www.mapcorewards.com/about/. Based on these websites we estimate that Western Refining owns 429 retail stations (approximately 75% of their total affiliated stations) while MAPCO owns 345 stations (over 95% of their total affiliated stations).

[184] http://www.cstbrands.com/en-us/OurCompany See also *EPA assessment of E85 stations affiliated with Valero*.

[185] See also *EPA assessment of E85 stations affiliated with Valero*.

[186] A total of 568 E85 stations are affiliated with Marathon, Western Refining, MAPCO, and Valero, however not all of these stations appear to be owned by one of the obligated parties (or CST).

ple, 165 E85 stations affiliated with RIN-Short obligated parties (19% of all the E85 stations affiliated with RIN-short obligated parties) are affiliated with either CENEX (149 stations) or CountryMark (16 stations). Stations affiliated with both CENEX and CountryMark are primarily located in the midwest, which may indicate that they have greater access to low cost E85 (as a result of proximity to many ethanol production plants) or the station owners and/or customers may be more inclined to support E85. Further, while it does not appear that CENEX directly owns any retail stations, CENEX is owned by CHS, a large agricultural cooperative that may be inclined to support the addition of E85 at their affiliated stations in an effort to support their core agricultural business. To the degree that increased E85 sales support ethanol prices, and ultimately corn prices, these benefits would be expected to be realized by CHS.

Based on our analysis of the data, EPA concludes that the most predictive factor for whether or not a retail fuel station offers E85 is whether the retail station is owned by a large company or whether a party the owns only a single or a small number of retail stations. Since Mr. Minsk's study does not control for this factor, or other potentially significant factors such as geography, we do not believe his work provides a sufficient basis for concluding that retail fuel stations affiliated with RIN-short parties are more likely to offer E85 than stations affiliated with RIN-long parties. There is thus insufficient support for the claim that changing the point of obligation would significantly increase the rate of growth of the number of retail stations offering E85. Unless consumer demand for E85 increases significantly, the expansion of E85 availability at retail will likely be minimal, except in cases where grant funding or other incentives are available,

and any addition of E85 at retail stations is very likely to be at stations owned by parties with significant access to capital. Changing the point of obligation will not impact any of these factors, and therefore is not expected to result in additional availability of E85 at retail.

Additionally, some commenters suggested that other limitations in the market, including the number of flex fuel vehicles, and liability and infrastructure compatibility surrounding E15 use, are key factors limiting the use of fuel blends with higher renewable content that would not be impacted by changing the point of obligation.[187]

E. The RFS Program Continues to Create a Significant Incentive for Parties to Invest in the Infrastructure Necessary to Enable Growth in the Use of Renewable Fuels

We believe that the RFS as currently structured provides significant incentives for further growth in the production, distribution and use of renewable fuels and, as discussed elsewhere, we do not believe that the incentives for renewable fuel production, distribution, and use would be greater if we were to change the point of obligation. The value of the RIN that is generated when renewable fuels are produced allows fuel blends that contain renewable fuels to be sold at lower prices than would otherwise be possible in the absence of the RFS program. Terminal owners and operators, as well as parties that blend renewable fuels downstream of terminals, are already incentivized to invest in blending infrastructure in an effort to

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[187] See, e.g., Comments from Cumberland Farms, EPA-HQ-OAR-2016-0544-0160; Comments from Tesoro, EPA-HQ-OAR-2016-0544-0244.

offer their customers the lowest cost fuels possible. Retailers are similarly incentivized to invest in the equipment necessary to offer renewable fuel blends to enable them to offer the widest range of fuel choices. In cases where a lack of competition may inhibit the full value of the RIN from being reflected in the retail price of the fuel, the RIN value can instead provide higher profit margins to the retail station owner to offset their investment in expanding renewable fuel infrastructure. This may ultimately result in more competing retail stations investing in the equipment necessary to offer E85, and with the increased competition retail prices for E85 would be expected to decrease (relative to E10) over time.

Some commenters cited to language in the 2014-2016 final rule indicating that high RIN prices would only result in modest increases in volumes of E85 as evidence that RIN prices cannot drive renewable fuel blending.[188] These commenters take this language out of context. In the 2014-2016 final rule, the EPA was attempting to assess the degree to which an annual volume standard could incentivize additional E85 sales in a single year, not the degree to which the RFS program as a whole can incentivize long term investments that could result in increased renewable fuel availability and use. EPA continues to believe that the RIN value is incentivizing investments to increase renewable fuel use.

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[188] See, e.g., Comments from CVR, EPA-HQ-OAR-2016-0544-0396, citing *Renewable Fuel Standard Program: Standards for 2014, 2015, and 2016 and Biomass-Based Diesel Volume for 2017*, 80 Fed. Reg. 77,420, 77,459 (Dec. 14, 2015).

F. Changing the Point of Obligation Would Not Be Expected to Increase Cellulosic Biofuel Production

While there continue to be challenges related to the distribution and use of renewable fuels in the United States, the largest single challenge to meeting the RFS program's statutory volumes is the shortfall in cellulosic biofuel production. The supply of cellulosic biofuel for 2018 was projected in the 2018 annual rule proposal to be only 3.4% of the statutory volume for these fuels. The importance of cellulosic biofuels to achieving the overall goals of the RFS program only increases in future years, as over 90% of the growth in the statutory volumes from 2018 to 2022 is expected to come from cellulosic biofuel. Changing the point of obligation would not be expected to address the current research, development, and commercialization challenges that will need to be overcome to enable the production of significant volumes of cellulosic biofuel in future years. Instead, to the degree that it reduces the incentive of the refiners to participate in the commercialization of cellulosic biofuels, changing the point of obligation from primarily refiners, who have significant financial resources and experience in commercializing new fuel production technologies on a large scale, to include many smaller downstream parties without such financial resources or experience may negatively impact the ability of the cellulosic biofuels industry to overcome these challenges. [189]Additionally,

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[189] See, e.g. Comments from Tesoro, EPA-HQ-OAR-2016-0544-0244, suggesting that a change to the point of obligation could "negatively impact ongoing efforts to spur advanced biofuel production initiatives being pursued by the refining industry." See also Letter from Tesoro, Ensyn, and Honeywell noting their efforts for a path forward for cellulosic biofuel production.

we believe that the uncertainty surrounding the RFS program that would likely result from a change in the point of obligation would discourage potential investors from investing in new cellulosic biofuel production technologies and commercial scale production facilities at a time when a number of cellulosic technologies are nearing commercial-scale production.

Some commenters suggested that by changing the point of obligation to the "position holders" EPA would increase the obligation for large integrated refiners, as most of these parties sell more gasoline and diesel at the rack than they refine or import.[190] These commenters argued that changing the point of obligation to the "position holders" would encourage these large integrated refiners to invest in cellulosic biofuels. Other parties, including large integrated refiners, indicated that an increasing RIN obligation for them would hinder their abilities to invest in cellulosic biofuels. Some parties associated with the renewable fuels industry supported EPA's conclusion that changing the point of obligation to "position holders" could harm investors in cellulosic biofuel production technologies and production facilities close to commercial-scale production.[191] Parties arguing that changing the point of obligation to "position holders" would increase investment in cellulosic biofuel development stated that the large integrated refiners have the necessary resources and are most capable of investing in research and development, but currently have no incentive to invest as they can fulfill their regulatory requirements without using cellulosic biofuel. As support for these statements the

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[190] EPA notes that this change would also decrease the RFS obligation of merchant refiners

[191] See, e.g. Comments from BIO, EPA-HQ-OAR-2016-0544-0217.

commenters compare the revenues of large integrated refiners to those of relatively smaller merchant refiners and the fact that several large integrated refiners are currently engaged in R&D efforts. The EPA does not find the arguments that changing the point of obligation to "position holders" would increase investment in cellulosic biofuel development convincing.

While the EPA acknowledges that large integrated refiners have significant revenues it is not clear why integrated refiners should be expected to invest in cellulosic biofuel development while merchant refiners, many of whom have less but still significant resources, should not.[192] The commenters note that several integrated refiners have recently reduced funding of R&D efforts for cellulosic biofuels. They allege that if these parties had relatively greater RIN obligations they would not have scaled back their investment. However, the EPA notes that these companies began investing in cellulosic biofuel R&D at a time when the RFS obligations were much lower than today. These parties did not suddenly reduce their investments after finding themselves with excess RINs. Rather, as the commenters themselves discuss, they have had excess RINs since the beginning of the RFS program. Indeed, if RIN obligations beyond a company's ability to obtain RINs by blending renewable fuels made a company more likely to invest in cellulosic biofuels, we would expect large merchant refiners such as Valero, Holly Frontier, and PBF Energy, which also have significant

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[192] Valero compares the combined revenue of Chevron and Shell ($197 billion in 2015) to the combined revenues of Valero, Holly Frontier, and PBF Energy ($78 billion in 2015), see EPA-HQ-OAR-2016-0544-0274. EPA believes that any of these companies have sufficient revenue to invest in cellulosic biofuel development if so inclined.

resources, to be investing significant sums in cellulosic biofuels, yet even the commenters acknowledge this is not the case. It appears it is likely that those integrated refiners that reduced their investment in cellulosic biofuel did so after determining that these investments were unlikely to result in long term profits, or that whatever profits could be realized were less than alternative investment opportunities. Finally, we note that because the cellulosic waiver authority in CAA 211(o)(7)(D) requires that EPA establish the cellulosic biofuel volume requirement at the level projected to be produced (if this volume is lower than the statutory volume) and to make cellulosic waiver credits available as an alternative means of compliance when the statutory volume is not in effect, the design of the RFS program provides limited encouragement for parties of any type to invest in cellulosic biofuels. Obligated parties, like all parties, are only expected to invest in cellulosic biofuel to the degree that they believe these investments will be profitable in the long term. We believe that changing the point of obligation to the "position holders," and thereby placing a greater burden on integrated refiners would be highly unlikely to significantly impact integrated refiner's investments in cellulosic biofuels.[193]

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[193] Some commenters suggested that changing the point of obligation could also increase development and investment in advanced biofuel production and use. These commenters did not provide any reasons why a change would result in these increases, and therefore EPA does not find these arguments compelling for similar reasons expressed above regarding cellulosic biofuel. See, e.g., Comments from CVR Energy, EPA-HQ-OAR-2016-0544-0396. In fact, EPA received comments suggesting that a change to the point of obligation would negatively impact ongoing efforts to increase advanced biofuel production. See Comments from Tesoro, EPA-HQ-OAR-2016-0544-0244.

G. Changing the Point of Obligation Would Not Be Expected to Increase Energy Security

As mentioned above, one of the stated goals of EISA and the RFS program is to increase energy security. Many commenters suggested that the EPA should consider how modifying the definition of obligated party could increase energy security and proposed several ways obligating "position holders" may result in increased energy security. These commenters often cited to comments by Commander Kirk S. Lippold, who suggested that the RFS program is harming US energy security.[194] Commander Lippold claims that the current point of obligation threatens the viability of some refiners, increases fuel costs to the military and other domestic consumers, and stimulates demand for foreign biofuels. EPA finds insufficient factual basis for these claims.

Some commenters suggested that the reason the U.S. has become a net exporter of petroleum fuel in recent years is that obligated parties were exporting fuels to avoid the RIN obligation. Some of these commenters conceded that the RFS played only some part in this, however others attributed the export of petroleum fuel to the RFS program. We do not believe these statements to be accurate, as the decision to export gasoline and diesel from the United States is driven by a desire to realize the maximum profits for these products in the global refined product market. There are no fuel shortages within the United States, so the exported fuel is not being exported at the expense of domestic use, but to find a market offering higher prices for these fuels than the domestic market. (See

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[194] Letter from Cdr. Kirk S. Lippold, to U.S.EPA, EPA-HQ-OAR-2016-0544-0143.

also Section II.E. for a further discussion of this issue). Changing the point of obligation to "position holders" would not alter these fundamental market dynamics, [and*] therefore would be unlikely to increase the energy security of the United States by decreasing the amount of exports of petroleum fuel.

Other commenters suggested that the current point of obligation would cause refineries to close, with some specifying that merchant refineries would be the most likely to close as a result of the RFS program. Commenters claimed that such closures would threaten American energy independence and national security. They stated that closure of northeast refineries would exacerbate dependence on foreign energy sources and could lead to price spikes in fuel. Commenters also suggested that increasing petroleum prices could harm the Department of Defense and other agencies.

Whether produced by domestic refiners (e.g., Northeast refineries) or imported into the U.S., gasoline and diesel fuel bear the exact same RIN obligation. Thus, there can be no incentive provided by the RFS program for greater dependence on foreign energy sources. Furthermore, The EPA disagrees that the current point of obligation is likely to cause refinery closures, for merchant refiners or any other refiners. Data reviewed by EPA demonstrates that refiners recover the cost of the RIN through higher prices for their petroleum products as discussed in section II.C. However, to further assess whether or not the RFS program, and specifically high RIN prices, might be causing refinery closures EPA examined publicly available data from the Energy Information Administration on refinery closures, deratings, and expansions from 2013 to 2017. We

* The original version reads "sand."

chose these years for our assessment, as this time period corresponds to the years with elevated D6 RIN prices. If the RFS program were causing refinery closures through high RIN prices, they would have been most likely to occur during these years. In its refinery capacity report, the Energy Information Administration (EIA) publishes a list of U.S. refinery shutdowns.[195] The list of refinery closures since 2013 is provided in Table III.G-1 below. As a point of reference, in 2013 there were 143 operable refineries with a total atmospheric crude distillation capacity[196] of 18,560,000 barrels per day in 2013.

[195] Table 13 Refineries Permanently Shutdown by PAD District Between January 1, 1990 and January 1, 2017 https://www.eia.gov/petroleum/refinerycapacity/table13.pdf

[196] Total Atmospheric Crude Distillation Capacity is the most commonly used measure of the capacity of a refinery.

Table III.G-1

Refinery Closures (2013-2017)

Company Name	Location	Date of Shut-down	Total Atmos-pheric Crude Distillation Capacity (bbl/cd)	Asphalt Plant
Hess Corporation	Port Reading, NJ	3/2013	0	No
Axeon Specialty Products LLC	Savannah, GA	12/2014	28,000	Yes
Ventura Refining and Transmis-sion LLC	Thomas, OK	11/2014	12,000	No
Trigeant LTD	Corpus Christi, TX	12/2014	0	Yes
Pelican Refining Company LLC	Lake Charles, LA	1/2015	0	Yes
Antelope Refining LLC	Douglas, WY	12/2016	3800	Yes
Flint Hills Resources LP	North Pole, AK	6/2014	126,535	No

A review of the list of refinery closures that occurred between 2013 and 2017 does not provide a compelling case for hardship caused by the RFS program. Four of the seven refineries are asphalt refineries which do not produce transportation fuels and are therefore not affected by the RFS program. The Flint Hills refinery is located in Alaska, which is exempt from the RFS program. According to a journal article covering the Hess refinery closure, the Hess management attributed the refinery closure to dwindling demand on the East Coast along with heating oil sulfur standards which were phasing in there.[197] The last refinery on the list of refinery closures is the Ventura refinery in Thomas, OK. Reviewing the gasoline production information provided by this company to EPA does not show that the Ventura refinery produced gasoline when this refinery was operating, although the refinery may still have had to comply with RFS program if the refinery produced diesel fuel.[198]

While there were very few refinery closures from 2013-2017 (and only one small refinery for which the available information is insufficient to discount attribution to the RFS program), refineries added additional capacity at their refineries. Between 2013 and 2017, the EIA data shows that the U.S. refining industry

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[197] Bell, Deborah; Hess Port Reading Refinery to Permanently Close Next Month, Woodbridge Patch, January 28, 2013. Available Online: https://patch.com/new-jersey/woodbridge/hess-port-reading-refinery-to-permanently-close-next-month.

[198] EPA conducted an analysis looking farther back in time in the draft regulatory impact analysis supporting the proposed Tier 3 emission standards, EPA-420-D-13-002, March 2013. Refineries closed at a far greater rate in years past. For comparison 102 refineries closed over the decade from 1982-1992, 46 from 1992-2002, and 2 from 2002 to 2012.

increased its atmospheric crude oil throughput capacity from about 19 million barrels per stream-day to 19.8 million bbl/stream-day, an increase of more than 4%. [199]A portion of this change in crude oil distillation capacity was for condensate splitting and for asphalt plants which do not produce finished fuels and therefore would not be affected by the RFS program. To focus our analysis more directly on refineries affected by the RFS program, we reviewed changes in individual refinery operable atmospheric crude oil capacity from 2013 to 2017.[200,201]The results of our assessment (as shown in Table III.G-2 below) show that from 2013 to 2017 refinery expansions outnumbered closures 39 to 4, and atmospheric crude capacity increases were more than 25 times the reductions. Note that this table does not include any added capacity for condensate splitters, any expansion or contraction at asphalt plants, or any expansion or contraction of refineries located in Alaska.

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[199] Table 6 Operable Production Capacity of Petroleum Refineries, January 1, 1988 to January 1, 2017 https://www.eia.gov/petroleum/refinerycapacity/table6.pdf

[200] Refinery capacity data by individual refinery as of January 1, 2013; Available Online at https://www.eia.gov/petroleum/refinerycapacity/archive/2013/refcap2013.php

[201] Refinery capacity data by individual refinery as of January 1, 2017; Available Online at https://www.eia.gov/petroleum/refinerycapacity/

Table III.G-2

Refinery Expansions, Closures, and Derating (2013-2017) Million Barrels per Stream-Day

Refinery Name	Expansions	Closures/ Derating	Net Expansion
Alon USA Energy Inc	4,000	0	4,000
American Refining Group Inc	1,300	0	1,300
Big West Oil Co	3,000	0	3,000
BP	4,000	0	4,000
Calcasieu Refining Co	25,000	0	25,000
Calumet	36,000	0	36,000
Chalmette Refining LLC	2,000	0	2,000
Chevron	17,000	0	17,000
CHS McPherson Refinery Inc	9,500	0	9,500
Citgo Refining	0	1,500	-1,500
CountryMark Cooperative Inc	2,600	0	2,600
Delek Refining LTD	10,000	0	10,000
Ergon	3,300	0	3,300
ExxonMobil	31,000	0	31,000
Flint Hills Resources LP	30,000	0	30,000

Hermes Consolidated LLC	4,000	0	4,000
HollyFrontier	27,020	0	27,020
Houston Refining	0	6,000	-6,000
Lima Refining Company	15,000	0	15,000
Marathon	120,500	0	120,500
Monroe Energy LLC	18,000	0	18,000
Motiva	20,000	0	20,000
Pasadena Refining Systems Inc	9,200	0	9,200
PDV Midwest Refining LLC	5,200	0	5,200
Philadelphia Energy Solutions	0	5,000	-5,000
Phillips 66	31,156	0	31,156
Placid Refining Co	23,500	0	23,500
Premcor Refining Group Inc	5,000	0	5,000
Shell Chemical LP	10,500	0	10,500
Silver Eagle Refining	100	0	100

Sinclair Wyoming Refining Co	5,000	0	5,000
St Paul Park Refining Co LLC	19,200	0	19,200
Suncor Energy (USA) Inc	500	0	500
Tesoro	27,600	0	27,600
Toledo Refining Co LLC	13,000	0	13,000
Torrance Refining Co LLC	2,000	0	2,000
Valero	276,500	18,000	258,500
Ventura Refining & Transmission	0	14,000	-14,000
Western Refining	5,000	0	5,000
WRB Refining LP	3,000	0	3,000
Total	819,676	44,500	775,176

The review of the individual refinery atmospheric crude capacity changes from 2013 to 2017 does not indicate hardship on the part of the US refining industry, and in fact, suggests that the market conditions in this time period promoted growth. Refiners are generally making investments in their refineries to expand their throughput capacity, suggesting that the US refining industry is growing and healthy. Furthermore, the refineries which expanded their atmospheric crude oil capacity included small, medium and large refineries, as well as both integrated and merchant refiners. Aggregate refinery expansions totaled about 820 thousand

barrels per stream-day (kbbl/stream-day), but is offset by 31 kbbl/stream-day of refinery closures and modest derating, for a total of 789 kbbl/stream-day of added throughput capacity (excluding condensate splitters, asphalt plants, and refineries located in Alaska).

IV. Changing the Point of Obligation Would Significantly Increase the Complexity of the RFS Program

In order to minimize the number of regulated parties and reduce programmatic complexity, the EPA in the RFS1 regulations placed the RFS point of obligation on the relatively small number of refiners and importers rather than on the relatively large number of downstream blenders. We noted then that the designation of downstream ethanol blenders as obligated parties would have greatly expanded the number of regulated parties and increased the complexity of the RFS program unnecessarily.[202] The same is true now. For example, consider the current point of obligation: refiners and importers. Identifying on a continuing basis those entities who produce or import gasoline and diesel fuel is relatively straightforward, as their businesses tend to operate from fixed physical locations that change infrequently, and ownership of the companies and assets also change relatively infrequently. In addition, identification and tracking of these entities is facilitated by our regulation of them under other (non-RFS) regulatory programs. However, the situation "downstream" of refiners and importers becomes much more complicated. There are a wide variety and large number of market participants, business practices, and contract mechanisms downstream of refiners and importers, and the parties, practices,

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[202] 72 Fed. Reg. at 23923.

and ownerships among entities downstream of refiners and importers are much more variable over time. All of these factors would make imposition of the RFS point of obligation on some subset (e.g. blenders or "position holders") of parties downstream of refiners and importers substantially more complex than the current system.

In the RFS2 proposal, we requested comment on whether the EPA should move the obligation downstream of refineries and importers to those parties who blend and supply finished transportation fuels to retail outlets or to wholesale purchaser-consumer facilities. In response to the proposal, stakeholders differed significantly. A few refiners, including Valero, expressed support for moving the obligations to downstream parties, while other refiners preferred to maintain the current approach. Blenders and other downstream parties generally expressed opposition to a change, citing the additional burden of demonstrating compliance with the standards, especially for small businesses. They also pointed to the need to implement new systems for determining and reporting compliance, the short lead time for doing so, and the fewer resources that smaller downstream companies have to manage such work in comparison to much larger entities such as refiners. We considered the comments received and concluded based upon the comments and information available to us that it was appropriate to maintain refiners and importers as obligated parties under the amended RFS2 program. In explaining our reasoning, we noted once again that changing the point of obligation would likely result in a significant increase in the number of obligated parties under the program.

Several of the petitions received by the EPA cite text from the 2010 Final Rule acknowledging that one of the initial justifications given for placing the obligation on refiners and importers of gasoline and diesel, rather than on parties that are "downstream" of the refineries, was a desire to minimize the number of regulated parties in the RFS program.[203] As the EPA stated in the 2010 Final Rule and Summary and Analysis of Comments, as a matter of regulatory design and implementation, it is desirable both to limit the number of obligated parties, and to limit burdening small businesses.[204] These considerations favored placing the point of obligation on the limited number of refiners and importers, rather than the larger number of blenders.

Additionally, as the EPA projected in the proposed RFS2 rule, virtually all downstream blenders are currently subject to RFS registration, recordkeeping and reporting requirements associated with their role as RIN owners. The EPA asked in that proposal whether, in light of this fact, it would be difficult administratively to move the obligation to these parties. The petitioners generally argue that moving the point of obligation to downstream parties would not be difficult, since they are already regulated in some fashion. However, while it is likely the case that all, or nearly all downstream blenders are now regulated parties under the RFS program due to the increased blending of renewable fuels required by the RFS program, the majority of these downstream parties are not refiners

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[203] 75 Fed. Reg. 14721 (March 26, 2010).

[204] Ibid.; Renewable Fuel Standard Program (RFS2) Summary and Analysis of Comments, EPA-420-R-10-003 (February 2010), at 3-216.

or importers and therefore are currently not obligated parties under the RFS program. There is a significant distinction between being a "regulated party" and being an "obligated party" under the RFS program.[205]

A. The Number of Obligated Parties Would Increase if the Point of Obligation was shifted to "Position Holders" or "Blenders"

Petitioners generally propose to change the point of obligation to "positions holders" and argue that doing so would involve a similar number of obligated parties or could reduce the number of obligated parties as compared to the number of obligated party refiners and importers that exist today. Petitioners provided EPA with an analysis to support their argument. Petitioners also argue that this proposed change would be relatively easy to implement because the number of obligated parties would at least remain relatively the same, if not decrease.[206] But as discussed in more detail below, we believe that Petitioners' suggested

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[205] Downstream blenders who blend renewable fuel into transportation fuel and own RINs at blending must report the quantity of RINs purchased, separated from renewable fuel, and sold according to the reporting requirements under 40 CFR 80.1451(c). They must also register with the EPA under 80.1450 and keep records as required under 80.1454. Small blenders can also shift the compliance burdens if they qualify under 40 CFR 80.1440. Obligated parties must meet all of these requirements and also calculate an annual renewable volume obligation, acquire the appropriate number of RINs in the market, practicing due diligence to ensure their validity, file annual compliance reports demonstrating compliance, and maintain records to that effect.

[206] See Valero Petition for Rulemaking, June 13, 2016, EPA-HQ-OAR-2016-0544-0008, Attachment D and E. See also report by IHS Global Insight, Inc., submitted by Monroe, EPA-HQ-OAR-2016-0554-0368, Attachment J (claimed as CBI).

change would result in a significant increase in the number of obligated parties. More importantly, we believe that the type of parties Petitioners seek to shift the point of obligation to, and their experience level and available resources indicate that implementing Petitioners' proposed change would result in a less effective RFS program that would be more difficult to implement and enforce.

As discussed above, the EPA believes that all else being equal, placing the point of obligation on a smaller number of obligated parties with significant financial resources and expertise in fuels markets is preferable to placing it on a larger number of relatively small entities. This approach facilitates program effectiveness by limiting the number of entities the EPA must interact with to provide guidance and to ensure compliance. It also places the burden on the larger, more sophisticated entities that are more likely to have the personnel and systems in place to enable compliance.

In the proposed denial, the EPA argued that the number of obligated parties would increase significantly if the point of obligation under the RFS Program were changed from refiners and importers to "position holders" at the rack. We cited our discussions with terminal operators and associations and our own data on oxygenate blenders for reformulated gasoline (RFG) to estimate that the obligated party count would increase from around 150 to between 350 and 1,000. The EPA argued that a higher number of obligated parties, many of whom would have less expertise and fewer resources to provide oversight to the RIN program to help ensure the validity of RINs than the current obligated parties, could result in greater noncompliance and RIN fraud. This could negatively impact the ability of the RFS program to achieve its

statutory goals. A larger number of obligated parties would also result in higher compliance monitoring and assistance costs, among other key market and policy concerns.

In its petition, Valero stated that moving the point of obligation to the "position holder" would not increase the obligated parties above 200, based on their extensive knowledge of all players in the fuel blending and sales industry. In its analysis, Valero aggregated all entities to the parent company level to come up with the 200 count. We note that this may not be an "apples to apples" comparison with the number of obligated parties under the current RFS regulations, as not all parties comply with their RFS obligations at the parent company level. EPA attempted to aggregate the list of obligated parties in 2016 to the parent company level to provide a count comparable to Valero's estimate. Based on this assessment there were approximately 97 obligated "parent companies," after aggregating the full list of obligated parties; significantly less than the estimate provided by Valero.[207]

During and after the comment period, the EPA engaged with the IRS to obtain more concrete information about the count of "position holders." Since several of the petitioners and commenters suggested changing the point of obligation to the "position holders," this information would allow EPA to determine the number of obligated parties that would result from changing the point of obligation to the "position holders." IRS reviewed the data it maintains on "S" registrants, which is defined by the IRS to include, using their definitions, enterers, position holders, refin-

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[207] *RFS 2016 Obligated Parties.* This document contains information claimed as CBI.

ers, terminal operators, or throughputters of gasoline, diesel fuel (including a diesel-water fuel emulsion), or kerosene, or industrial users of gasoline.[208] The IRS noted that they cannot identify which type of actor an "S" registrant is (enterer, position holder, refiner, etc.). The EPA notes that, utilizing IRS definitions, refiners (those that break bulk at a refiner gate), position holders (those that break bulk at a terminal), and enterers (those that import fuel through means other than at a terminal such as truck are the actors that would become obligated parties if the point of obligation shifted to "position holders" as proposed by petitioners and as the term is used in this document. Terminal operators and throughputters would not become obligated parties if the point of obligation shifted to "position holders" as proposed by petitioners, as these parties do not hold title to the gasoline or diesel fuel immediately prior to the sale of these fuels at the terminal.[209] If a terminal operator or throughputter "breaks bulk," in a given quarter, they are categorized for that quarter as a position holder or refiner. "S" registrants file Form 720, the Quarterly Federal Excise Tax Return, to report the quantity of fuel they own. EPA requested the number of "S" registrants who paid taxes as owners of gasoline or diesel, to represent the potential number of obligated parties if the point of obligation shifted to "position holders" as proposed by petitioners because the RVO applies to volumes of

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[208] The IRS definition of "position holder" is different than how the term is used in this document, and how it is used by petitioners. The IRS definition applies only to parties who hold title to fuel above the terminal rack. Refiners who hold title to fuel above the refinery rack are a separate entity ("refiners") under IRS definitions.

[209] Using IRS terminology, these parties do not "break bulk"

gasoline and diesel ("S" registrants that do not own any gasoline or diesel in any given year would not pay taxes or have an RFS obligation for that year).

Information received from the IRS included the following:

- For fiscal year 2015, there were 1,571 "S" registrants, of which 715 filed Form 720 tax forms.[210]
- In calendar year 2016, 443 of the Form 720 tax filers paid taxes as owners of gasoline or diesel.[211]
- There is approximately a 30 percent turnover in number of parties that pay taxes as owners of gasoline or diesel from year to year.[212]

Based on this information, the EPA has concluded that the best estimate for the number of parties that would have been obligated parties in 2016 if EPA changed the point of obligation to the "position holders" is approximately 443. The 30 percent turnover in program participations from year to year implies that the obligated parties could be quite variable year over year. Although the total number of obligated parties would likely be around 450 per year, the EPA would

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[210] Not all parties that filed a Form 720 tax form paid taxes as owners of gasoline or diesel

[211] Some of the 720 tax filers paid taxes on fuels other than gasoline or diesel, and therefore would not likely become obligated parties if EPA changed the point of obligation to the "position holder"

[212] This estimate of annual turnover was provided to EPA by IRS. It is not calculated using the information in the preceding bullets.

still need to track the parties who may have been obligated in previous years, and account for movements in and out of the RFS program. For example, if 30% of the "position holders" changed from 2016 to 2017, we would expect that there would be a total of approximately 576 parties that were "position holders" over a two year period.[213] Assuming the EPA adopted the approach to reporting currently utilized by the IRS, as suggested by many petitioners and commenters, we would expect approximately 450 obligated parties in any given year along with a large group of parties we would need to consider as "potentially obligated parties" (at least 133[214] based on turnover in a single year, and likely many more) based on their prior year's activities. Since IRS cannot share data on the identity of the Form 720 tax filers nor on the volumes of gasoline or diesel they move over the rack this would cause significant enforcement challenges for EPA, especially as many of these parties would likely be difficult to identify. In calendar year 2016, there were 120 obligated parties under the current RFS regulations;[215] a change to obligate "position holders" would more than

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[213] This is the minimum number of obligated parties that would be expected if EPA changed the point of obligation to the "position holders," assuming a 30% turnover. The actual number of obligated parties would likely be far higher.

[214] 133 is 30% of 443 (the number of "position holders" in 2016)

[215] 40 CFR Part 80 currently allows obligated parties to comply with the RFS requirements at the "facility" level if they so choose, and thus provides for flexibilities for obligated parties to comply as compared to reporting to the IRS. In 2016 the EPA received 191 compliance demonstrations; 93 from aggregated refiners, 59 from individual facilities, and 39 from importers of gasoline or diesel. We note that some of the obligated parties submitted compliance demonstrations as both aggregate refiners and importers of gasoline and diesel.

double the number of obligated parties. The matter would be even more complex for EPA administration in light of the additional potentially responsible parties whose activities EPA would likely feel obligated to monitor to some degree to verify whether they should be obligated parties in any given year, assuming these parties could be identified. As such, the EPA continues to believe that the obligated party count would increase significantly, and program administration would be considerably more complex, under the petitioners' proposal.

The EPA received several comments that challenged EPA's assertion in the proposed denial that an increase in the number of obligated parties would result in a higher administrative burden on the EPA, in part because it would increase the number of annual compliance reports for the EPA to review every year. While administrative burden is a secondary consideration, relative to achieving the statutory goals of the RFS program, EPA has assessed the claims made by these commenters. One set of comments countered that changing the point of obligation to "position holder" would result in a decrease in the number of RIN transactions because obligated parties would acquire the RINs at blending and retire them without intervening transactions.[216] The argument follows that the EPA would need to verify fewer RIN transactions, thereby decreasing administrative burden. The EPA notes that its compliance monitoring and verification costs have little to do with the number of RIN transactions that occur. Rather, the EPA expends the majority of its oversight resources to monitor and provide compliance assistance for registration activities (includ-

[216] Comments from Valero Energy Corporation, EPA-HQ-OAR-2016-0544-0274.

ing updates to registration after an ownership or personnel change), annual compliance report submissions, RIN retirements, and remedial actions for errors that have occurred. The oversight burden of these activities is directly related to the total number of obligated parties and not the total number of RIN transactions. Furthermore, the EPA notes that current obligated parties submit other compliance reports to EPA to meet other Part 80 requirements, and EPA uses these reports to help verify RFS volumes in the annual compliance reports. If the "obligated party" definition changes to "position holder," EPA would no longer be able to utilize this data verification method and would need to develop other verification methods to ensure the integrity of the RFS program.

Another set of comments suggested that compliance costs would not increase with an increase in the number of obligated parties because the EPA could get the list of obligated parties along with their verified gasoline and diesel volumes directly from IRS.[217] In light of these comments, the EPA discussed at length with IRS whether a data sharing agreement could be developed to allow the EPA to obtain this type of detailed IRS data on "position holders." The IRS stated that tax returns and tax return information are confidential and may be disclosed only as authorized under Internal Revenue Code section 6103(a). "Return information" is broadly defined to include any information gathered with regards to a taxpayer's liability under the Code, including a taxpayer's identity. As such, the IRS stated that even a mere list of "position holders" would constitute return information and could not be

[217] See, e.g., Comments from CVR Energy, EPA-HQ-OAR-2016-0544-0396; Comments from the Small Refiners Coalition, EPA-HQ-OAR-2016-0544-0406.

provided to the EPA without the consent of each "position holder." Therefore, the EPA has concluded that the commenters' argument is incorrect and that EPA would be unable to obtain the information it would need from the IRS to identify the "position holders" and determine their obligated volumes of gasoline and diesel and would instead need to develop its own systems to identify obligated parties and track their obligated fuel volumes.

Some commenters argued that "position holders" would have very little compliance burden as obligated parties because they would simply utilize the measurements, calculations, and records already in place to meet IRS requirements.[218] Likewise, they argued that EPA could simply change its RVOs requirements to equal the volumes reported on Form 720. However, based on a detailed comparison of IRS requirements to RFS requirements, the EPA has concluded that the volumes reported on Form 720 are different than the volumes used to calculate RVOs. Most notably, ethanol and biodiesel that is blended into gasoline and diesel fuel at the terminal upstream of the rack are included in the Form 720 gasoline and diesel volumes, while those biofuels must be excluded from gasoline and diesel volumes used to calculate RVOs. In addition, home heating oil volumes, kerosene, fuel used by ocean going vessels, volumes used in Alaska and the Territories, and volumes that cross a rack a second time are reported on Form 720, while those volumes must be excluded in determining RVOs. Data provided to the EPA by the IRS shows that the total volume on which taxes were paid by "S" registrants in 2016 was about 244 billion gallons. The total gasoline and diesel

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[218] Comments from Valero Energy Corporation, EPA-HQ-OAR-2016-0544-0274.

volumes produced by refiners and importers in 2016 according to the RFS compliance reports submitted by these parties to the EPA was about 180 billion gallons.[219] Therefore, EPA has concluded that obligated parties would not all be able to simply use the Form 720 volumes to calculate their RVOs; a significant number would likely need to take, maintain, and report different measurements than they currently do for IRS compliance purposes. Likewise, the EPA would have to expend significant administrative resources to create regulations, instructions and compliance assurance assistance related to obtaining and verifying the information need for obligated parties to calculate their RVOs.

The Small Refiners' Coalition and CVR Energy suggested that if the EPA could not obligate "position holders" due to concerns about statutory authority, then the EPA could instead obligate all blenders, and that such a change would not add to the complexity of the program or harm small entities.[220] The EPA disagrees with those conclusions – for the reasons articulated above about the additional complexities associated with designating "position holders" as obligated parties, obligating "blenders," which includes many "position holders" and other small entities, would also increase complexity in the RFS program, due to an increased number of obligated parties, and potentially

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[219] See EPA Annual Compliance Data for Obligated Parties and Renewable Fuel Exporters under the Renewable Fuel Standard (RFS) Program; Table 1. https://www.epa.gov/fuels-registration-reporting-and-compliance-help/annual-compliance-data-obligated-parties-and#total-gasoline

[220] See, e.g., Comments from CVR Energy, EPA-HQ-OAR-2016-0544-0396; Comments from the Small Refiners Coalition, EPA-HQ-OAR-2016-0544-0406.

very small entities, including retail station owners. These small entities would have additional obligations and requirements, and although they may currently separate and sell RINs, they do not currently have the same requirements as an obligated party. More importantly, however, as discussed in Section III above, EPA does not believe, based on the information in the record, that changing the point of obligation to downstream parties (either "position holders" or blenders) would result in additional production, distribution or use of renewable fuels.

B. The Potential for Noncompliance May Increase if the Point of Obligation is Changed

Currently, many of the obligated parties are large entities with sufficient resources, staff, expertise and tools to comply with registration, reporting and recordkeeping requirements under the RFS program. The EPA is concerned that moving the point of obligation as proposed by the petitioners could bring in many small entities that may not have the resources or expertise to comply. The addition of a number of small entities with relatively less regulatory experience and expertise could lead to increased overall noncompliance with RFS requirements. This could be seen as increasing the overall regulatory burden due to an influx of more parties (many of which may be small businesses) that have little or no familiarity with the RFS program, and it would likely also increase the administrative burden on the EPA to help educate these entities to help them comply, and to ensure their compliance.

Further, in any rulemaking to modify the RFS point of obligation, the EPA would need to consider impacts to small entities, as it did in its prior rulemakings. Congress itself considered the relief appropriate for

small refineries that are obligated parties, exempting them through 2010 and then allowing for an extension of their exemption if warranted by a DOE study or through the EPA's review of small refinery petitions alleging that their compliance would result in disproportionate economic hardship. The EPA used its discretion in the 2010 RFS2 rule to extend similar relief to the few additional small refiners that did not qualify as small refineries. The EPA convened a Panel under the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA) to consider whether additional relief to small refiners or refineries was warranted. Were we to propose changing the point of obligation, we would need to ensure that small businesses were aware of this proposed change and potential impact to their business by re-engaging in the SBREFA process. Since the statute contains no specific provisions providing relief for small entities that are "position holders" or blenders, the EPA's analysis in considering the need for, and fashioning appropriate relief would potentially be more complex. The SBREFA process includes a number of steps and would take some time to implement properly. For example, before beginning the formal SBREFA process, the EPA would need to engage in outreach with entities that would potentially be affected by the proposed change and provide the small businesses with an early opportunity to ask questions and discuss their concerns with the upcoming rulemaking. Furthermore, we reasonably expect that there would be strong interest from some stakeholders to exempt small businesses from RFS obligations. If exempted, these parties could have a (potentially significant) financial advantage over parties that do have RFS obligations and this dynamic could result in an increasing number of small businesses entering this market. Regardless of the outcome of the

SBREFA process, it is clear that the RFS market would experience significant uncertainty in such a transition and that the uncertainty may last for some time.

We expect there would be more non-compliance if we changed the point of obligation because blenders and "position holders" are likely to have less experience and fewer resources to be able to comply with the registration, reporting and recordkeeping requirements under the RFS program. Further, we believe the number of obligated parties would significantly increase, which would place greater strain on limited resources to ensure compliance and conduct program oversight. In particular, the information received from the IRS after the proposed denial was issued has strengthened our rationale for why and how administrative costs and the potential for fraud and/or non-compliance would increase with a change in point of obligation to "position holder." Since there is an approximately 30 percent turnover from year to year in the 720 tax filers program, it would require significant resources to identify those new obligated parties and to verify that no other obligated parties are evading the requirements. It would also require an increase in resources to provide compliance assistance to those new obligated parties as they learn a new program for the first time, or become re-acquainted with it after a period of non-activity. Additionally, while current obligated parties typically have significant assets that could potentially be used to pay civil penalties and to purchase RINs to replace any determined to be fraudulent, it is reasonable to assume that many "position holders" and blenders have relatively fewer tangible assets or real property. It is possible that companies with few tangible assets could violate the RFS standards, make a quick profit, and shut down or leave the

country without being brought to justice for their actions. Even if we were able to locate these parties and prevail in the civil or criminal proceedings, these parties could file for bankruptcy and never have to purchase replacement RINs or pay penalties associated with noncompliance. This could lead to less renewable fuel use than intended, and could unfairly disadvantage other obligated parties that meet their RFS obligations. The decreased potential for EPA to ensure through enforcement actions that the RIN system is made whole for any noncompliance would negatively impact the integrity of the RFS program and introduce still more uncertainty into the RIN market.

In the proposed denial, the EPA argued that placing the obligation on a smaller number of parties with significant assets generally results in a more efficient and therefore more effective program. The EPA stated that refiners and importers generally have greater resources than downstream market participants that enable them to provide oversight of the RIN generators to help ensure that the RINs being traded in the marketplace are valid. Changing the point of obligation, we posited, would require that newly obligated parties make the necessary investments to enable compliance with their new RFS obligations. This could take a significant amount of time and represent a significant financial burden to the new obligated parties, especially as we expected that many would be smaller companies with fewer resources than the existing obligated parties.

The EPA received some comments that "position holders" are big and sophisticated companies that would not be financially burdened by RFS compliance and RIN validity oversight duties. In its engagement with IRS during and after the comment period, the

EPA requested from IRS data on the quantity of gasoline and diesel reported by "position holders" in calendar year 2016 in order to assess the size of the companies. The IRS was unable to provide the names associated with each volume of fuel, or the names of the parties that paid excise tax for gasoline or diesel more generally. Instead, the IRS provided EPA with a dataset that grouped the 443 "S" registrants that paid excise tax for gasoline or diesel in calendar year 2016 into blocks of five in descending order of gallons reported; for each block of five registrants, the dataset aggregated the gasoline and diesel gallons reported into one number.[221] Grouping the parties that paid excise tax in 2016 in this way resulted in a dataset of 86 data points for the EPA to analyze. The EPA compared this information to similar data available to the Agency from the obligated parties' 2016 RFS compliance reports. From this information, the EPA compared the volume of gasoline and diesel produced or imported by the 100 largest parties to the total reported volume gasoline and diesel volume in both the IRS and EPA data sets. The 100 largest obligated parties (per the current RFS definition) reported gasoline and diesel volumes that were 95% of the total volumes reported by all obligated parties. Similarly, the 100 "position holders" with the largest volumes accounted for over 95 percent of all volumes reported by all "position holders" paying excise taxes on gasoline and diesel in 2016. This suggests that the differences between

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[221] For example, IRS reported the quantity of gasoline and diesel reported by the five largest "position holders" in 2016, the volume produced by the 6th-10th largest "position holders," the volume produced by the 11th-15 largest "position holders," etc. As noted above, the IRS did not provide the identity of the parties that paid excise tax for gasoline or diesel in 2016. See *IRS Aggregated Volume Data*.

the number of obligated parties under the current RFS regulations and "position holders" is not merely the result of company aggregation, as the proportion of total fuel represented by the 100 largest parties in each data set are similar.

The IRS data also showed that over 99.5% of all gasoline and diesel is sold by the 215 largest "position holders." This means that the remaining 228 registrants[222] – a majority of "position holders" in fiscal year 2016 – together accounted for less than 0.5 percent of all volumes reported on the IRS Form 720. If EPA changed the point of obligation to the "position holders" of gasoline and diesel as requested by the petitioners, we would expect a large number of new obligated parties. For 2016 alone there would have been an additional 323 obligated parties.[223] However, since there is approximately 30 percent turnover from year to hear in the identity of the "position holders" the total number of parties who would have the role of "obligated party" over the years could be significantly higher and the lack of stability in the pool of obligated parties would mean more difficulty in tracking and accounting for those parties. The EPA expects that a great many of the parties who would not consistently be obligated parties would be obligated for small volumes of gasoline and diesel, since the total volume of obligated fuel from the 228 "position holders" with the lowest volume of reported gasoline or diesel combined is projected to

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[222] This number is calculated by subtracting the 215 "position holders" responsible for 99.5% of all gasoline and diesel from the total number of 443 "position holders."

[223] This number is calculated by subtracting the number of obligated parties under the current RFS regulations in 2016 (120) from the number of "position holders" that sold gasoline or diesel in 2016 (443)

be less than 0.5% of the total obligated volume of gasoline and diesel sold in the United States. This data strongly supports EPA's assessment that changing the point of obligation to the "position holders" would result in an obligation being placed on a large number of previously unobligated parties, and that many of these newly obligated parties are likely to be small businesses.[224]

C. The EPA Would Need to Establish Transition Provisions

The current RFS regulations allow parties to satisfy up to 20% of any given RVO with RINs generated in the previous year, effectively allowing parties to "carry over" a limited number of RINs for use (by them or others to whom they may sell these RINs) in satisfying RFS compliance obligations the following year. Similarly, obligated parties that have an insufficient number of RINs to demonstrate compliance at the compliance deadline may carry forward the deficit into the following year without penalty, provided they satisfy both their deficit and full RVO the following year. Compliance data submitted to the EPA indicates that, in aggregate, parties carried over approximately 2.5 billion 2016 RINs into 2017. While smaller in magnitude, a number of parties also carried forward an aggregate deficit of approximately 400 million RINs from 2016 into 2017.

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[224] As discussed further in Section V.B., some parties who would become obligated under a change to the definition of "obligated party" may choose to adjust their business practices to avoid an obligation under the RFS program. If parties were to take this action, this could mitigate some of the concerns raised in this section, but would be unlikely to cause all parties to change their practices and would likely have other ramifications.

If the EPA abruptly changed the point of obligation to the fuel blenders or "position holders" we would also impact the RVOs for obligated parties in future years relative to what they would have reasonably anticipated under the existing point of obligation, thus raising concerns about fairness. In some cases, these changes could be significant. Refiners and importers with significantly lower RVOs under the new point of obligation may find themselves in possession of significantly more RINs, including carryover RINs, than they desire or can use. Conversely, parties with a significantly higher RVO under the new point of obligation may find themselves with lower balances than they would desire to protect themselves against shortfalls in RIN availability or RIN price volatility. Unlike the current situation, where the number of carryover RINs held by an obligated party is primarily the result of the decisions made by that party under a consistent regulatory structure, the change in the size of each obligated party's RIN holdings relative to its obligations under the RFS program would be the result in a change in the definition of the obligated parties many years after the point of obligation was established through a notice and comment rulemaking.

While the tradable nature of the RINs in the RFS program would help to mitigate these potential negative impacts, a change to the point of obligation could also cause volatility in the market. Parties with excess RINs could recover some or all of the costs associated with acquiring these RINs, or potentially make a profit, by selling them to newly obligated parties or those who desire to acquire a bank of carryover RINs to protect themselves from future RIN shortfalls or market volatility. The ability for parties that possess excess carryover RINs to recover the cost of the RINs they hold by selling them to other parties, however, will be largely

impacted by the effect changing the point of obligation has on the price of RINs. If, as some of the petitioners have suggested, as a feasible or desirable outcome of changing the point of obligation the price of RINs were to fall dramatically, then this change could have a significant negative financial impact on parties that find themselves in the possession of excess RINs due to a change in the point of obligation. Even if EPA were to take steps such as providing significant lead time to minimize impacts, a change to the point of obligation could result in RIN market volatility and disparities in RIN-holdings.

D. Changing the Point of Obligation Would Require Significant Changes to EMTS and Other Electronic Systems

A change in the point of obligation would necessitate changes to the Agency's registration and reporting systems. This would result in adding complexity and stress to already complex systems. It could potentially lead to degradation in service and reduced availability to all system users. For any given compliance year since 2010, between 1,300 – 1,500 parties participate in the RFS program as renewable fuel producers, RIN owners or obligated parties. Currently, EMTS averages about 23,000 transactions daily.

As discussed previously, shifting the point of obligation downstream could result in about 450 obligated parties in EMTS in any given year. This could result in an increase in EMTS transactions (transfers, separations and retirements) as a larger number of RIN batches (many of them likely of smaller volume) change hands between a greater number of obligated parties, without any increase to the total number of RINs in the system. The OTAQReg registration system would need to be modified to reflect the new

definition of obligated party, and both existing non-obligated EMTS participants and new participants would need to register/reregister. Rights and access controls to EMTS would need to be revised to ensure proper reporting and oversight of RIN transactions.

In addition to changes to reflect the additional numbers and roles of registrants in EMTS, changing the point of obligation may require additional functionality for EMTS to take account of changes in business practices and additional potential for non-compliance, including avoiding compliance obligations, failure to identify as an obligated party, or not understanding RFS requirements. The EPA may find that the additional potential for non-compliance requires additional reporting of information not currently tracked in EMTS, such as accounting for movements of physical volumes of gasoline and diesel fuel between potential obligated parties, similar to a designate-and-track system, to ensure that RFS obligations are assigned to the proper parties. Such a system would include additional reporting by parties such as refiners, marketers, and blenders to ensure RFS goals are being met. Ancillary reports such as quarterly and annual compliance reports submitted to CDX and annual attest engagements would also increase in volume and complexity.

V. Changing the Point of Obligation Could Cause Significant Market Disruption

In the petitions the EPA has received requesting a change to the point of obligation in the RFS program, the petitioners generally characterize their proposed changes to the point of obligation as minor or simple. The EPA disagrees with these characterizations and believes that changing the point of obligation would be a significant change for the RFS program, and would

likely lead to significant changes in the fuels marketplace more generally.

A. Market Participants Have Made Significant Decisions on the Basis of the Existing Regulations

When EPA first instituted the RFS program in 2007, and again when EPA significantly revised the RFS regulations in 2010 in response to the EISA amendments, the EPA requested and received many comments related to the point of obligation of the RFS program. These comments were carefully considered and the EPA specifically sought the input of the refining industry. The decision to place the point of obligation on refiners and importers in 2007, and to uphold that decision in 2010, was made with the support of much of the refining industry.

Since then all parties regulated in the RFS program have made significant investments and decisions about their participation in the program and their position in the market on the basis of the existing regulations, including the definition of obligated parties. Some parties sought to increase their access to RINs acquired by blending renewable fuels by expanding their presence at terminals where renewable fuels are blended, or investing in blending infrastructure downstream of terminals. Other parties entered into contracts to purchase renewable fuel with attached RINs and/or separated RINS to satisfy their own needs or for resale to obligated parties, while yet others became major renewable fuel suppliers as well. Each year obligated parties decided how to best satisfy current and future RIN obligations, including whether or not to carry over RIN deficits or excess RINs into future years.

Each of these decisions was made with the expectation that each party's RFS obligation in future years would continue to be proportional to the volume of gasoline and diesel fuel they refine or import, as is the case under the current RFS regulations. If the EPA were to change the point of obligation as requested by the petitioners, RFS obligations would instead be proportional to the volume of gasoline or diesel fuel that parties blend with renewable fuel, or the volume of gasoline and diesel fuel sold by parties immediately above the rack. This would substantially impact the relative size of many parties' RFS obligations and would very likely result in efforts to reposition themselves in the marketplace, either by renegotiating contracts or even seeking to buy or sell assets associated with the blending of renewable fuels. If changing the point of obligation of the RFS program were reasonably likely to result in a significant increase in the amount of renewable fuel that was produced, distributed, and used in the United States relative to the current point of obligation such a change may be justified; however, since we do not believe that changing the point of obligation will result in significant increase in the production distribution and use of renewable fuel, these impacts are important to consider.

B. If the Point of Obligation is Changed, Parties Would Be Expected to Reposition Themselves to Avoid or Minimize RFS Obligations

One of the desired outcomes of changing the point of obligation in the RFS program expressed by the petitioners is to shift the obligation to renewable fuel blenders or "position holders" that have access to RINs through the blending of renewable fuels. While assessing these petitions, the EPA received letters from a number of independent fuel marketers and

parties that own a large number of retail fueling stations.[225] These parties are generally not currently obligated parties (because they do not typically refine gasoline or diesel fuel, however on occasion some import gasoline and/or diesel fuel), but would likely become obligated parties if the EPA changed the point of obligation as requested by the petitioners as they blend renewable fuels and/or are "position holders" at terminals. In addition to questioning many of the benefits of changing the point of obligation claimed by the petitioners, these parties stated that if the EPA changed the point of obligation they would likely adjust their business practices in an effort to avoid becoming obligated parties, either by purchasing fuels already blended with transportation fuel and/or purchasing fuel below the rack.[226]

In their letters to the EPA, these parties acknowledged that by moving below the rack they may give up a number of advantages that contribute to their profitability, such as the ability to purchase fuel in bulk at a slight discount, the ability to better control their fuel supply, and advantages related to the collection of taxes. Nevertheless, these parties stated that the expected costs associated with becoming obligated parties, primarily the costs associated with developing expertise necessary to manage their new RFS obligations and the documentation requirements, may very well outweigh any benefits currently experienced in their position as renewable fuel blenders and/or

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[225] See Letter from Tim Columbus to Administrator McCarthy, August 15, 2016; Letter from RaceTrac to Administrator McCarthy, August 17, 2016; Letter from QuikTrip to Administrator McCarthy, August 17, 2016; Letter from Pilot Flying J to Administrator McCarthy, August 16, 2016.

[226] Ibid.

"position holders." In their arguments these parties referenced their experience with California's LCFS program, which allows compliance obligations to be passed on to the "position holders." They stated that this has resulted in less competitive markets at the rack, increasing fuel prices for consumers, as many parties sought to purchase fuel below the rack, rather than above the rack, to avoid LCFS obligations. They claimed that this would be especially true for the many small entities currently engaged in the gasoline and diesel fuel spot markets. The EPA primarily spoke with and received written communication from larger businesses that are currently blenders of renewable fuels and/or "position holders," however any overhead costs associated with being an obligated party would likely be proportionally more significant for small businesses.

If parties that would become obligated parties for the first time if the EPA were to change the point of obligation as requested by the petitioners react as they have claimed in discussions and written communication with the EPA, by adjusting their business practices to avoid becoming obligated parties under the new definition, this would significantly impact the expected results of such a change. Some of the concerns raised by the EPA, such as the large number of new parties that would become obligated parties under the new definition and the relatively small nature of these parties, would be mitigated, as these parties likely would adjust their businesses to avoid becoming obligated parties under the new definition. However, such market restructuring would likely have other market ramifications.

While it is uncertain which parties would ultimately have increased obligations if EPA were to change the

point of obligation as requested by the petitioners and independent fuel marketers and retail station owners exit their current market positions as renewable fuel blenders and "position holders," it is possible that the current obligated parties that do not sell gasoline and diesel at the rack, would take up these positions in an effort to find consumers for the fuel they produce and import. If this were to happen, the end result of this significant market restructuring would be that the RFS obligations would not substantially change from what they are under the current definition of obligated parties. Refiners and importers would likely take on terminal positions and the role of blending renewable fuels abandoned by the parties who currently satisfy these roles in the market. Ultimately, the RFS obligations may not be substantially different in this scenario than they are today, and if this were the case it is questionable if the benefits claimed by the petitioners would not be realized. During the time period when the EPA went through the rulemaking process to change the point of obligation, however, and as the fuels marketplace adjusted to the realities of the change in the point of obligation there would be significant market uncertainty and potential turmoil. To the degree that the EPA invests significant agency resources to enable the change in the point of obligation and fuels industry participants withhold significant investment decisions until the EPA's final decision and the fallout from the decision are known, this could have a significant negative impact on achieving the goals of the RFS program.

In comments, those in support of changing the point of obligation suggested that the benefits of being a "position holder" would outweigh any costs of becoming an obligated party under the RFS system, and "position holders" would not change their market practices in order to avoid the RFS obligation, citing to ben-

efits such as "the ability to purchase fuel in bulk at discount, the ability to better control their fuel supply, and advantages related to the collection of taxes."[227] In contrast, many parties who would become obligated under the Petitioners' proposed definition stated that they would indeed change their market position or at least reevaluate their position purchasing fuel above the rack.[228] Some stated that they currently purchase some of their fuel above the rack, and some fuel below the rack depending on the costs and market dynamics, indicating that parties would be willing to modify their position in the future as well. Based on the evidence before it, EPA believes some parties would change their market position in response to a change in the point of obligation, and that such a change further supports EPA's denial.

While changing the point of obligation in the RFS program would be unlikely to better achieve the goals of the RFS program, especially if many of the fuel blenders, independent marketers, and retail station owners change their business practices to avoid becoming obligated parties, these changes could have broader negative impacts in the fuels marketplace. If the independent marketers and retail station owners cease to be "position holders," we believe the market positions they vacate are likely to be taken up by existing refiners. This could start to reverse the fuel industry's transition over the last decade to move away from the integrated model in which refiners disinvested from downstream infrastructure at wholesale and retail. The integrated model has previously caused concerns

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[227] See, e.g., Comments from CVR Energy, EPA-HQ-OAR-2016-0544-0396.

[228] See, e.g., Comments from UPS, EPA-HQ-OAR-2016-0544-0076.

regarding fuel price impacts and manipulation in the market. We believe that changing the point of obligation could provide an incentive for a shift in control to a relatively few large parties upstream and remove choices and flexibilities that downstream businesses have negotiated over the years in order to hold a position in what is currently a highly competitive fuels market. Changing the point of obligation as requested by the petitioners could result in greater market concentration in certain markets. For example, if independent marketers and retailers give up their positions at terminals in an effort to avoid becoming obligated parties it is possible that some terminals could become dominated by a small number of refiners, or even a single refiner. This reduction in competition could result in higher fuel prices for the retail stations that purchase fuel from these terminals, and ultimately for their consumers. This concern was echoed by many commenters.[229] The absence of independent marketer and retail station owners at terminals may also negatively impact the ability for retail station owners to purchase fuel on the spot market, instead forcing them to rely on longer term contracts with refiners to a greater degree. This would further limit the retailers' options to purchase the lowest cost fuel. These are just examples of the negative impacts that could result from broader market restructuring if the EPA were to change the point of obligation of the RFS program as requested by the petitioners.

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[229] See, e.g., Comment from Casey's, EPA-HQ-OAR-2016-0544-0268; Comments from American Trucking Association, EPA-HQ-OAR-2016-0544-0355.

VI. Other Comments

The EPA received comments contending that the RIN market is "illegal," as the statute provides that transfer of credits must be "for the purpose of complying" with the RFS program, CAA section 211(o)(5)(B), and that unobligated blenders and RIN traders do not comply with the RFS program.[230] They also state that the "EPA allows entities to generate RINs from blending any volume of renewable fuel,"[231] and not just those quantities greater than the statutory volumes, as suggested by the statute.[232] In response, EPA notes that the RIN system was initially established through notice and comment rulemaking with considerable support from stakeholders in RFS1, and then reaffirmed with relatively minor adjustments in RFS2. Thus, the time to seek judicial review of the creation of the RIN compliance system is past. EPA did not reopen this matter in the context of its proposed denial of the petitions seeking a change in the point of obligation, so these comments are beyond the scope of this action. By means of explanation, and without intending by this response to open this resolved matter for further debate or consideration, we note that the RIN system serves two purposes: as a general compliance mechanism, and as a means of implementing the statutes' credit provisions. These commenters ignore or minimize the compliance mechanism aspect of the RIN

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[230] See, e.g., Comments from CVR Energy, EPA-HQ-OAR-2016-0544-0396; Comments from the Small Refiners Coalition, EPA-HQ-OAR-2016-0544-0406.

[231] Commenters' suggestion that RINs may be generated from blending is inaccurate; RINs are generated at the point of renewable fuel production, and can be separated at the point of blending. See 40 CFR 80.1426-27.

[232] CAA section 211(o)(5)(A)(i)

system, and EPA's authority under CAA Sections 211(o)(2) and 301 to establish a compliance program which could include credit elements that extend beyond the specific elements required in CAA Section 211(o)(5).

Monroe Energy stated that the EPA had an obligation to conduct a jobs analysis under CAA section 321(a) before it denied the petitions for rulemaking, citing *Murray Energy Corp. v. McCarthy*, No. 5:14-CV-39 (N.D. W. Va. 2014). The company further stated that, had the EPA performed this jobs analysis, EPA would have recognized the threat of closures and job losses to merchant refineries. First, the EPA notes that on appeal of the district court decision cited by Monroe Energy, the Fourth Circuit Court of Appeals held that CAA section 321(a) does not impose a non-discretionary duty on the EPA. *Murray Energy Corp. v. EPA,* 861 F.3d 529 (4th Cir. 2017). Second, CAA section 321 does not, as this commenter suggests, specify that completion of a jobs analysis is a prerequisite to the Agency's authority to act on a petition for rulemaking or to take any other final agency action. Finally, the EPA has evaluated claims that the RFS program as currently structured harms merchant refiners, and disagrees with the commenter that this is the case *See* Section II.C, *supra*.

The EPA received additional comments that are outside the scope of this determination. Some commenters suggested that conventional biofuels lack environmental and greenhouse gas benefits. Other commenters suggested that the RFS should incent co-processing of renewable feedstocks with petroleum at refineries.[233] The EPA also received comments suggesting a "diesel disparity:" that refiners that produce a

[233] See Comments from UPS, EPA-HQ-OAR-2016-0544-0076.

higher percentage of diesel have difficulty meeting their RVO through blending.[234] In addition, some commenters suggested that the RFS program should not include imported biofuel.[235] As these comments are outside the scope of this determination, we decline to address them here.

VII. Conclusion

Congress authorized the EPA to require "refiners, importers, and blenders, as appropriate" to be obligated parties in the RFS program.[236] After reviewing the petitions the EPA has received requesting changes to the point of obligation in the RFS program, reviewing the comments submitted on our proposed denial of these petitions, assessing the relevant data available to the EPA, and speaking with and reviewing written communication from numerous parties that would likely be impacted by the requested change, the EPA continues to believe that the point of obligation is appropriately placed on refiners and importers, consistent with the current regulation. We believe that the parties requesting this change significantly underestimate the scope and impacts of the changes that would result from the number and nature of additional parties that would become obligated parties if the point of obligation were changed. In addition, we do not believe that the evidence indicates that the changes Petitioners have requested would result in additional production, distribution, and use of renewable fuels as

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[234] See Comments from CVR Energy, EPA-HQ-OAR-2016-0544-0396; Comments from Small Refiners' Coalition EPA-HQ-OAR-2016-0544-0406.

[235] See Comments from the Small Refiners' Coalition, EPA-HQ-OAR-2016-0544-0406.

[236] CAA Section 211(o)(3)(B)(ii)(I).

transportation fuel in the United States. If anything we believe it could negatively impact renewable fuel volumes, especially during the substantial transition that would be required. Both in the short and long-term, we believe that the program is more likely to succeed with the current set of obligated parties. The EPA has evaluated the functionality of the RIN market and believes that the RIN program provides a generally efficient and equitable means for all obligated parties to meet their compliance obligations, and that the shortfalls in renewable fuels to date are attributable to broader market forces that would be unaffected by merely changing the point of obligation. It is likely that if the changes requested by the petitioners were made, many of the parties that would become obligated parties as a result of the change in the definition of obligated parties would reposition themselves in an effort to avoid or minimize their obligations under the RFS program. Such market repositioning could minimize any long term impacts of the proposed change on the production, distribution, and use of renewable fuel, but may also have far-reaching negative consequences across the fuels marketplace, and increase fuel prices for consumers. In addition, the EPA believes the point of obligation should be retained to promote stability and regulatory certainty.[237] The Administrator is therefore denying the petitions requesting that the EPA initiate a rule-making process to reconsider or change the regulation identifying refiners and importers of gasoline and diesel fuel as the entities responsible for complying with the

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[237] In addition, as noted in section III.A. EPA does not interpret the Clean Air Act as authorizing us to place the point of obligation on distributors or on "position holders" that are not refiners, blenders or importers.

annual percentage standards adopted under the RFS program.

EPA has determined that this action is nationally applicable for purposes of CAA section 307(b)(1). since the result of this action is that the current nationally-applicable regulation defining obligated parties who must comply with nationally applicable percentage standards developed under the RFS program remains in place. In the alternative, even if this action were considered to be only locally or regionally applicable, the action is of nationwide scope and effect for the same reason, and because the action impacts entities that are broadly distributed nationwide who must comply with the nationally-applicable RFS percentage standards, as well as other entities who are broadly distributed nationwide that could potentially have been subject to such requirements if EPA had elected to grant the petitions seeking a change in the definition of obligated parties.

APPENDIX G

ENVIRONMENTAL PROTECTION AGENCY

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40 CFR Part 80

**[EPA–HQ–OAR–2016–0544;
FRL–9971–36–OAR]**

Notice of Denial of Petitions for Rulemaking To Change the RFS Point of Obligation

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AGENCY: Environmental Protection Agency (EPA).

ACTION: Denials of rulemaking requests.

SUMMARY: The Environmental Protection Agency (EPA) is providing notice of its denial of several petitions requesting that EPA initiate a rulemaking process to reconsider or change 40 CFR 80.1406, which identifies refiners and importers of gasoline and diesel fuel as the entities responsible for complying with the annual percentage standards adopted under the Renewable Fuel Standard (RFS) program.

DATES: November 30, 2017.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2016–0544. All documents in the docket are listed on the *http://www.regulations.gov* Web site. 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, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Pub-

licly available docket materials are available electronically through *http://www.regulations.gov*.

FOR FURTHER INFORMATION CONTACT: Julia MacAllister, Office of Transportation and Air Quality, Assessment and Standards Division, Environmental Protection Agency, 2000 Traverwood Drive, Ann Arbor, MI 48105; telephone number: 734-214-4131; email address: *macallister.julia@epa.gov*.

SUPPLEMENTARY INFORMATION:

I. Background

On March 26, 2010, the EPA issued a final rule (75 FR 14670) establishing regulatory amendments to the renewable fuel standards ("RFS") program regulations to reflect statutory amendments to Section 211(o) of the Clean Air Act enacted as part of the Energy Independence and Security Act of 2007. These amended regulations included 40 CFR 80.1406, identifying refiners and importers of gasoline and diesel fuel as the "obligated parties" responsible for compliance with the RFS annual standards. Beginning in 2014, and continuing to the present, some obligated parties and other stakeholders have questioned whether 40 CFR 80.1406 should be amended, and a number of them have filed formal petitions for reconsideration of the definition of "obligated party" in 40 CFR 80.1406, or petitions for rulemaking to amend the provision. On January 27, 2014, Monroe Energy LCC ("Monroe") filed a "petition to revise" 40 CFR 80.1406 to change the RFS point of obligation, and on January 28, 2016, Monroe filed a "petition for reconsideration" of the regulation. On February 11, 2016, Alon Refining Krotz Springs, Inc.; American Refining Group, Inc.; Calumet Specialty Products Partners, L.P.; Lion Oil Company; Ergon-West Virginia, Inc.; Hunt Refining Company; Placid

Refining Company LLC; U.S. Oil & Refining Company (the "Small Refinery Owners Ad Hoc Coalition") filed a petition for reconsideration of 40 CFR 80.1406. On February 12, 2016, Valero Energy Corporation and its subsidiaries ("Valero") filed a "petition to reconsider and revise" the rule. On June 13, 2016, Valero submitted a petition for rulemaking to change the definition of "obligated party." On August 4, 2016, the American Fuel and Petrochemical Manufacturers ("AFPM") filed a petition for rulemaking to change the definition of "obligated party." On September 2, 2016, Holly Frontier also filed a petition for rulemaking to change the definition of "obligated party."

The petitioners all seek to have the point of obligation shifted from refiners and importers, but differed somewhat in their suggestions for alternatives in their petitions. Some requested in their petitions that EPA shift the point of obligation from refiners and importers to those parties that blend renewable fuel into transportation fuel. Others suggested that it be shifted to those parties that hold title to the gasoline or diesel fuel immediately prior to the sale of these fuels at the terminal (these parties are commonly called the "position holders"), or to "blenders and distributors". All petitioners argued, among other things, that shifting the point of obligation to parties downstream of refiners and importers in the fuel distribution system would align compliance responsibilities with the parties best positioned to make decisions on how much renewable fuel is blended into the transportation fuel supply in the United States. Some of the petitioners further claimed that changing the point of obligation would result in an increase in the production, distribution, and use of renewable fuels in the United States and would reduce the cost of transportation fuel to consumers.

On November 22, 2016, EPA published a notice in the **Federal Register** announcing its proposed denial of all petitions seeking a change in the definition of "obligated party" in 40 CFR 80.1406, and soliciting comment on its draft analysis of the petitions and proposed rationale for denial. (81 FR 83776). EPA opened a public docket under Docket ID No. EPA–HQ–OAR–2016–0544, where it made its draft analysis available. EPA received over 18,000 comments on the proposed denial, including comments from the petitioners, stakeholders, and individuals supporting the request that EPA change the point of obligation for the RFS program, as well as from many stakeholders and individuals supporting EPA's proposed denial and reasoning. In comments, petitioners were in agreement that the point of obligation should be moved to "position holders."

II. Final Denial

The final decision document describing EPA's analysis of the petitions seeking a change in the definition of "obligated parties" under the RFS program and our rationale for denying the petitions is available in the docket referenced above (Docket ID No. EPA–HQ–OAR–2016–0544). In evaluating this matter, EPA's primary consideration was whether or not a change in the point of obligation would improve the effectiveness of the program to achieve Congress's goals. EPA does not believe the petitioners or commenters on the matter have demonstrated that this would be the case. At the same time, EPA believes that a change in the point of obligation would unnecessarily increase the complexity of the program and undermine the success of the RFS program, especially in the short term, as a result of increasing instability and uncertainty in programmatic obligations.

We believe that the current structure of the RFS program is working to incentivize the production, distribution, and use of renewable transportation fuels in the United States, while providing obligated parties a number of options for acquiring the RINs they need to comply with the RFS standards. We do not believe that petitioners have demonstrated that changing the point of obligation would likely result in increased use of renewable fuels. Changing the point of obligation would not address challenges associated with commercializing cellulosic biofuel technologies and the marketplace dynamics that inhibit the greater use of fuels containing higher levels of ethanol, two of the primary issues that inhibit the rate of growth in the supply of renewable fuels today. Changing the point of obligation could also disrupt investments reasonably made by participants in the fuels industry in reliance on the regulatory structure the agency established in 2007 and reaffirmed in 2010. While we do not anticipate a benefit from changing the point of obligation, we do believe that such a change would significantly increase the complexity of the RFS program, which could negatively impact its effectiveness. In the short term we believe that initiating a rulemaking to change the point of obligation could work to counter the program's goals by causing significant confusion and uncertainty in the fuels marketplace. Such a dynamic would likely cause delays to the investments necessary to expand the supply of renewable fuels in the United States, particularly investments in cellulosic biofuels, the category of renewable fuels from which much of the majority of the statutory volume increases in future years is expected.

In addition, changing the point of obligation could cause restructuring of the fuels marketplace as newly obligated parties alter their business practices to avoid

the compliance costs associated with being an obligated party under the RFS program. We believe these changes would have no beneficial impact on the RFS program or renewable fuel volumes and would decrease competition among parties that buy and sell transportation fuels at the rack, potentially increasing fuel prices for consumers and profit margins for refiners, especially those not involved in fuel marketing. In addition, we note that in comments on EPA's proposed denial, commenters favoring a change in the definition of "obligated party" were predominantly in favor of designating position holders as obligated parties. However, position holders are not all refiners, importers or blenders. Therefore, EPA believes the petitioners' proposal is not well aligned with the authority provided EPA in the statute to place the RFS obligation on "refineries, importers and blenders, as appropriate."

A number of parties that either petitioned EPA to change the definition of "obligated party," or commented favorably on those petitions also challenged the rule establishing RFS standards for 2014, 2015 and 2016, alleging both that EPA had a duty to annually reconsider the appropriate obligated parties under the RFS program and that it was required to do so in response to comments suggesting that it could potentially avoid or minimize its exercise of the inadequate domestic supply waiver authority if it did so. In a recent ruling in that litigation, the United States Court of Appeals for the District of Columbia Circuit declined to rule on the matter, and instead indicated that EPA could address the matter either in the context of a remand of the rule ordered on other grounds, or in response to the administrative petitions that are the subject of this notice. *See Americans for Clean Energy* v. *Environmental Protection Agency*, 864 F.3d 691 (D.C. Cir. 2017) ("*ACE*"). As noted above, EPA is

denying the petitions seeking a change in the definition of "obligated parties." EPA also is re-affirming that the existing regulation applies in all years going forward unless and until it is revised. EPA does not agree with the petitioners in the *ACE* case that the statute requires annual reconsideration of the matter and, to the extent that EPA has discretion under the statute to undertake such annual reevaluations, EPA declines to do so since we believe the lack of certainty that would be associated with such an approach would undermine success in the program.

EPA has determined that this action is nationally applicable for purposes of CAA section 307(b)(1). since the result of this action is that the current nationally-applicable regulation defining obligated parties who must comply with nationally applicable percentage standards developed under the RFS program remains in place. In the alternative, even if this action were considered to be only locally or regionally applicable, the action is of nationwide scope and effect for the same reason, and because the action impacts entities that are broadly distributed nationwide who must comply with the nationally-applicable RFS percentage standards, as well as other entities who are broadly distributed nationwide that could potentially have been subject to such requirements if EPA had elected to grant the petitions seeking a change in the definition of obligated parties.

Dated: November 22, 2017.

E. Scott Pruitt,
Administrator.

[FR Doc. 2017–25827 Filed 11–29–17; 8:45 am]

BILLING CODE 6560–50–P

APPENDIX H

ENVIRONMENTAL PROTECTION AGENCY

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40 CFR Part 80

[EPA–HQ–OAR–2017–0091; FRL–9964–86–OAR]

RIN 2060–AT04

Renewable Fuel Standard Program: Standards for 2018 and Biomass-Based Diesel Volume for 2019

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed Rule [July 21, 2017].

SUMMARY: Under section 211 of the Clean Air Act, the Environmental Protection Agency (EPA) is required to set renewable fuel percentage standards every year. This action proposes the annual percentage standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel that apply to gasoline and diesel transportation fuel produced or imported in the year 2018. Relying on statutory waiver authority that is available when projected cellulosic biofuel production volumes are less than the applicable volume specified in the statute, the EPA is proposing volume requirements for cellulosic biofuel, advanced biofuel, and total renewable fuel that are below the statutory applicable volumes, and lower than the 2017 requirements. In this action, we are also proposing the applicable volume of biomass-based diesel for 2019.

DATES: Comments must be received on or before August 31, 2017. EPA will announce the public hearing date and location for this proposal in a supplemental **Federal Register** document.

[Content Omitted]

D. RIN Market Operation

Some stakeholders have expressed concerns the current provisions related to RIN trading render the RFS program vulnerable to market manipulation. EPA takes such issues seriously. The RIN system was originally designed with an open trading market in order to maximize its liquidity and ensure a robust marketplace for RINs. However, EPA is interested in further assessing whether and how the current trading structure provides an opportunity for market manipulation. To that effect, EPA seeks comment and input on potential changes to the RIN trading system that might help address these concerns. EPA is not soliciting comment on any aspect of the current RFS regulatory program other than those specifically related to RIN trading, as mentioned above, and the proposed annual standards for 2018 and biomass-based diesel applicable volume for 2019. In particular, EPA is not re-opening for public comment in this rulemaking the current definition of "obligated party."[11]

Separate from evaluating the RIN trading options in the RFS program, the EPA is working with appropriate market regulators to analyze targeted concerns of some stakeholders. For example, the EPA has executed a memorandum of understanding with the Commodity

[11] Separately, EPA has received a number of petitions seeking reconsideration of the definition of "obligated party," and solicited public comment on its proposed resolution of those petitions. See 81 FR 83776 (November 22, 2016)

Futures Trading Commission (CFTC) and welcomes CFTC involvement in evaluating RIN market concerns.

In the meantime, EPA has continued to explore additional ways to increase program transparency in order to support the program and share data with all stakeholders. EPA already publishes RFS program data on our Web site, including data related to RIN generation, sales and holdings, and annual compliance. We are interested in providing more information, to the extent consistent with our obligations to protect confidential business information. EPA seeks comment on specific data elements and posting frequency that stakeholders believe would be useful to help with market transparency and liquidity.

[Content Omitted]

APPENDIX I

ENVIRONMENTAL PROTECTION AGENCY

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40 CFR Part 80

**[EPA–HQ–OAR–2017–0091;
FRL–9968–70–OAR]**

Renewable Fuel Standard Program: Standards for 2018 and Biomass-Based Diesel Volume for 2019; Availability of Supplemental Information and Request for Further Comment

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AGENCY: Environmental Protection Agency (EPA).

ACTION: Availability of supplemental information; request for further comment [October 4, 2017].

SUMMARY: This document provides additional data and an opportunity to comment on that data and potential options for reductions in the 2018 biomass-based diesel, advanced biofuel, and total renewable fuel volumes, and/or the 2019 biomass-based diesel volume under the Renewable Fuel Standard (RFS) program. In a July 21, 2017 notice of proposed rulemaking, the EPA proposed certain reductions in the statutory volume targets for advanced biofuel and total renewable fuel for 2018, and requested comment on further reductions based on various considerations. This document presents additional data on production, imports and cost of renewable fuel and several options for how we may consider such data in establishing the final vol-

ume requirements using the waiver authorities provided by the statute.

DATES: Comments must be received on or before October 19, 2017.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–HQ–OAR–2017–0091, at *https://www.regulations.gov*. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or withdrawn. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.*, on the Web, cloud, or other file sharing system). For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *http://www.epa.gov/dockets/commenting-epa-dockets*.

FOR FURTHER INFORMATION CONTACT: Julia MacAllister, Office of Transportation and Air Quality, Assessment and Standards Division, Environmental Protection Agency, 2000 Traverwood Drive, Ann Arbor, MI 48105; telephone number: 734–214–4131; email address: *macallister.julia@epa.gov*.

SUPPLEMENTARY INFORMATION:

Outline of This Preamble

I. General Information

A. Would this rule, if finalized, apply to me?

Entities potentially affected by the July 21, 2017 proposed rule[1] (the July proposal), should it become final, are those involved with the production, distribution, and sale of transportation fuels, including gasoline and diesel fuel or renewable fuels such as ethanol, biodiesel, renewable diesel, and biogas.

[Content Omitted]

II. Overview

On July 21, 2017, EPA proposed reductions in the statutory volume targets for advanced biofuel and total renewable fuel using the cellulosic waiver authority in Clean Air Act (CAA) section 211(o)(7)(D).[2] We proposed using the maximum reduction permitted under that authority (considering the proposed cellulosic volume requirement) to reduce the 2018 volume targets for advanced biofuel and total renewable fuel to 4.24 and 19.24 billion gallons, respectively, in part by placing a greater emphasis on cost considerations than we have in the past. We requested comment on possible additional reductions in advanced biofuel (with corresponding reductions in total renewable fuel) using the general waiver authority in CAA section 211(o)(7)(A) or other authorities. Similarly, we requested comment on whether EPA should, in the final rule, reduce the 2019 volume requirement for biomass-based diesel

[1] 82 FR 34206.

[2] 82 FR 34206.

(BBD)[3] to a level below the proposed level of 2.1 billion gallons.[4]

We did not specifically request comment in the proposed rule on a possible reduction of the 2018 volume requirement for BBD, which was set at 2.1 billion gallons in 2016.[5] We did, however, request comment on the use of the general waiver authority or other authorities to reduce the advanced biofuel requirement for 2018, and BBD is not only nested within advanced biofuel but is also the predominant source of advanced biofuel. Therefore, considerations leading to a reduction of the advanced biofuel volume may also be relevant in reducing the 2018 BBD volume requirement. In this document we are providing additional information on renewable fuel costs and supply as well as possible options for the exercise of our waiver authorities based on these and other considerations.

We note that the statute also provides EPA the authority to waive a portion of the BBD standard if there is a significant renewable feedstock disruption or other market circumstances that would make the price of biomass-based diesel fuel increase significantly, and to make related reductions in the advanced biofuel

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[3] Advanced biodiesel and renewable diesel with a D code of 4.

[4] We note the possibility that in light of our consideration of comments received on this document and the NPRM that the final rule could implement volume requirements that deviate further from the volume targets in the statute than the proposed levels. We believe the statutory provisions embody multiple Congressional objectives, including both increasing renewable fuels and limiting in certain circumstances the additional cost or economic impact associated with such increases. We invite comment on how to balance these objectives in exercising our waiver authorities.

[5] 81 FR 89746, December 12, 2016.

and total renewable fuel volume requirements.[6] In light of recent developments, described below, we seek comment on whether it would be appropriate to use this waiver authority in the final rule.

III. Cost and Supply of Advanced Biofuel

As EPA indicated in the July proposal, the cost of advanced biofuels is high on a per gallon basis compared to the petroleum fuels they replace. The expiration of the biodiesel tax credit in the U.S. at the end of 2016 has already impacted the effective price of biodiesel to blenders, as well as the price of biodiesel blends to consumers. While it does not appear that the expiration of the tax credit has had a direct impact on the price of unblended biodiesel (B100) in 2017, we expect that the expiration of the tax credit has had a significant impact on the effective price of biodiesel sold to blenders. This is because the biodiesel tax credit that expired at the end of 2016 was received by biodiesel blenders, rather than biodiesel producers. The price of biodiesel and EPA's estimated effective price of biodiesel to blenders (net the $1/gallon tax credit when applicable) from January 2016 through August 2017 are shown in Figure III–1 below.[7] We also expect the price of biodiesel used in the U.S. could increase further following a recent preliminary determination by the Department of Commerce that it would be appropriate to place countervailing duties of 41% to 68% on

[6] Under CAA section 211(o)(7)(E)(ii).

[7] After January 1, 2017 the price of biodiesel and the estimated effective price of biodiesel to blenders are identical, as the tax credit expired at the end of 2016.

imports of biodiesel from Argentina and Indonesia.[8] Cash deposits against preliminary duties are currently being collected, potentially impacting prices prior to a final determination. Such duties could also affect import volumes as pointed out in a recent letter from the American Fuel and Petrochemical Manufacturers (AFPM).[9] A final decision from the Department of Commerce and the International Trade Commission, which could include final countervailing duty orders, is scheduled for December 29, 2017.

[Content Omitted]

The level of imports and exports can also affect the price of renewable fuel used in the U.S., and both imports and export volumes have varied considerably over the last several years. Based on data collected on RIN generation and retirement from the EPA-Moderated Transaction System (EMTS), we have determined gross domestic production and import and export volumes for advanced biofuels and biomass-based

[8] "Commerce Preliminary Finds Countervailable Subsidization of Imports of Biodiesel from Argentina and Indonesia," available in EPA docket number EPA–HQ–OAR–2017–0091.

[9] "AFPM letter on biodiesel supply in 2017," available in docket EPA–HQ–OAR–2017–0091.

diesel for the years 2013 through 2016.[10] Further details can be found in a memorandum to the docket.[11]

[Content Omitted]

Commenters raised concerns that along with affecting prices of renewable fuels in the U.S., imports may also have an impact on the energy independence and security status of the U.S.[12] Increasing the energy independence and security of the U.S. is one of the stated goals in the Energy Security and Independence Act of 2007, and the RFS program's standards affect the volumes of both domestic production and imports. EPA requests comment on whether it is appropriate to consider possible impacts of these volumes on U.S. energy independence and security in setting the applicable standards under the RFS program, insofar as they impact those factors that we are permitted to consider and evaluate under the available waiver authorities, and/or the standard-setting authority for BBD.

EPA remains concerned about the high cost of advanced biofuels. As a result, and in light of the pending action on countervailing duties on imported biodiesel from Argentina and Indonesia which we believe

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[10] The use of RIN data necessarily excludes renewable fuel import or export volumes for which no RINs were generated. RINs may not be generated, for instance, if ethanol has not been denatured or if a producer is exporting a renewable fuel. However, for advanced biofuels, RINless volumes (which would not be reflected in Tables III-1 or III-2) are expected to be an extremely small portion of all volumes.

[11] "Imports and exports of renewable fuel in 2013 through 2016," memorandum from David Korotney to docket EPA-HQ-OAR-2017-0091.

[12] See *e.g.,* comments from AFPM/API, EPA-HQ-OAR-2017-0091-3645.

could, if finalized, further increase the cost and/or decrease the supply of advanced biofuel in the U.S., we believe it is appropriate to request further comment on appropriate ways to determine the applicable volume requirements for 2018, and the BBD volume requirement for 2019.

[Content Omitted]

APPENDIX J

U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF TRANSPORTATION AND AIR QUALITY

ASSESSMENT AND STANDARDS DIVISION

EPA-420-R-17-007

Renewable Fuel Standard Program Standards For 2018 And Biomass-Based Diesel Volume For 2019: Response to Comments

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December 2017

[Content Omitted]

9.4 Beyond the Scope

Commenters that provided comment on this topic include, but are not limited to: 0446, 1177, 1301, 1756, 1774, 1776, 1913, 2539, 2542, 2545, 3105, 3106, 3110, 3142, 3178, 3241, 3247, 3306, 3497, 3575, 3593, 3646, 3677, 3678, 3873, 3887, and 3955.

Comment:

Commenters addressed numerous additional topics, including the following:

- Legislative changes for the RFS program, including repeal of the RFS program
- Changes to the existing RFS regulations, including removing the obligation on exported renewable fuel

- Updates to EPA's lifecycle analyses
- Treatment of cellulosic waiver credits
- Changes to the point of obligation for the RFS program
- RFS registration issues
- Suggestions for new RIN-generating pathways including renewable electricity, and improvements to the petition and efficient producer pathways processes
- Impacts of ethanol on engines
- Extending the 1 psi RVP waiver for E15
- Changes to the E15 misfueling mitigation plans
- Approving new fuels such as mid-level ethanol blends and biobutanol
- Potential future RFS rulemakings such as the "reset rule" or an action to address the remand of the 2016 RFS standards
- The creation of a general hardship exemption for refiners
- The Renewables Enhancement and Growth Support (REGS) rule, including biointermediates and ethanol flex fuel

Response:

These comments are all beyond the scope of this rulemaking as EPA did not propose any changes to the overall structure of the RFS program or otherwise seek comment on these issues. These topics are not further addressed in this document.

[Content Omitted]

APPENDIX K

ENVIRONMENTAL PROTECTION AGENCY
40 CFR Part 80

[EPA–HQ–OAR–2017–0091; FRL–9971–73–OAR]
RIN 2060–AT04

Renewable Fuel Standard Program: Standards for 2018 and Biomass-Based Diesel Volume for 2019

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule [December 12, 2017].

SUMMARY: Under section 211 of the Clean Air Act, the Environmental Protection Agency (EPA) is required to set renewable fuel percentage standards every year. This action establishes the annual percentage standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel that apply to gasoline and diesel transportation fuel produced or imported in the year 2018. Relying on statutory waiver authority that is available when projected cellulosic biofuel production volumes are less than the applicable volume specified in the statute, the EPA is establishing volume requirements for cellulosic biofuel, advanced biofuel, and total renewable fuel that are below the statutory volume targets. In this action, we are also establishing the applicable volume of biomass-based diesel for 2019.

DATES: This final rule is effective on February 12, 2018.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2017–0091. All documents in the docket are listed on the *http://www.regulations.gov* Web site. 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, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through *http://www.regulations.gov*.

FOR FURTHER INFORMATION CONTACT:

Julia MacAllister, Office of Transportation and Air Quality, Assessment and Standards Division, Environmental Protection Agency, 2000 Traverwood Drive, Ann Arbor, MI 48105; telephone number: 734–214–4131; email address: *macallister.julia@epa.gov*.

SUPPLEMENTARY INFORMATION:

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

Category	NAICS[1] codes	SIC[2] codes	Examples of potentially regulated 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	221210	4925	Manufactured gas production and distribution.
Industry	454319	5989	Other fuel dealers.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated. To determine whether your entity would be regulated 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 action to a particular entity, consult the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

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[1] North American Industry Classification System (NAICS).

[2] Standard Industrial Classification (SIC) system code.

Outline of This Preamble

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* The table of contents in the original version omitted subsections 5 and 8.

I. Executive Summary

The Renewable Fuel Standard (RFS) program began in 2006 pursuant to the requirements in Clean Air Act (CAA) section 211(o) that were added through the Energy Policy Act of 2005 (EPAct). The statutory requirements for the RFS program were subsequently modified through the Energy Independence and Security Act of 2007 (EISA), leading to the publication of major revisions to the regulatory requirements on March 26, 2010.[3] EISA's stated goals include moving the United States (U.S) toward "greater energy independence and security [and] to increase the production of clean renewable fuels." Today, nearly all gasoline used for transportation purposes contains 10 percent ethanol (E10), and on average diesel fuel contains more than 4 percent biodiesel and/or renewable diesel.[4]

The statute includes annual volume targets, and requires EPA to translate those volume targets (or alternative volume requirements established by EPA in accordance with statutory waiver authorities) into compliance obligations that obligated parties must meet every year. In this action, we are establishing the annual percentage standards for cellulosic biofuel, biomass-based diesel (BBD), advanced biofuel, and total renewable fuel that would apply to all gasoline and diesel produced or imported in 2018. We are also establishing the applicable volume of BBD for 2019.

Real-world challenges, in particular the slower-than-expected development of the cellulosic biofuel industry, has slowed progress towards meeting Congressional goals for renewable fuels. Given the nested nature

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[3] 75 FR 14670, March 26, 2010.

[4] Average biodiesel and/or renewable diesel blend percentages based on EIA's October 2017 Short Term Energy Outlook (STEO).

of the standards, the shortfall in cellulosic biofuels has made the volume targets established by Congress for 2018 for advanced biofuels and total renewable fuels beyond reach. On July 21, 2017, EPA published a proposed rulemaking, containing proposed volume requirements for the RFS Program's four categories of renewable fuels that would apply in 2018 (and 2019 for BBD).[5] On August 1, EPA hosted a public hearing on the proposed rule, and EPA received over 235,000 written comments on the proposed rule as well. On October 4, 2017 (82 FR 46174), EPA published an "Availability of Supplemental Information; Request for Further Comment," (hereinafter, "October 4 document") seeking further comment on the possible use of other waiver authorities in the final rule. Transcripts of the public hearing, along with all the comments received on the proposed rule and the October 4 document are available in the docket. After careful review of the information before us we are finalizing volume requirements for 2018 for cellulosic biofuel, advanced biofuel and total renewable fuel that are lower than the statutory targets, but nevertheless will ensure these renewable fuels will continue to play a critical role as a complement to our petroleum-based fuels. The final rule modifies the volume requirements slightly relative to the proposed rule, and in this notice we explain where and why such modifications were made.

In this action, we are finalizing volume requirements for cellulosic biofuel at the level we project to be available for 2018. We are using the "cellulosic waiver authority" provided by the statute to finalize volume requirements for advanced biofuel and total renewable fuel that are lower than the statutory targets by the

[5] 82 FR 34206, July 21, 2017.

same magnitude as the reduction in the cellulosic biofuel reduction (*i.e.,* the volumes we are finalizing for cellulosic biofuel, advanced biofuel, and total renewable fuel are all 6.71 billion gallons lower than the statutory volumes). We are not reducing volumes through use of the general waiver authority or the biomass-based diesel waiver authority.[6] We note that while we are reducing the required volume of total renewable fuel, advanced biofuel and cellulosic biofuel below statutory levels, the required volumes in this rule would achieve the implied statutory volumes for conventional biofuel[7] and non-cellulosic advanced biofuel[8] for 2018.

The final volume requirements for 2018 are shown in Table I–1 below. Relative to the levels finalized for 2017, the 2018 volume requirements for advanced biofuel and total renewable fuel are higher by 10 million gallons. EPA is reducing the advanced biofuel and total renewable fuel statutory volumes by the same amount as we are reducing the cellulosic biofuel volume. These reductions effectively preserve the implied statutory volumes for conventional renewable fuel and non-cellulosic advanced biofuels. We are establishing the volume requirement for BBD for 2019 at the proposed volume of 2.1 billion gallons.

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[6] See 42 U.S.C. 7545(o)(7)(A)(i–ii). See also the discussion of the general waiver authority in Section II.A.2. below.

[7] Throughout this final rule conventional biofuel refers to biofuel that qualifies as renewable fuel, but does not qualify as an advanced biofuel. RINs generated for conventional biofuels have a D code of 6.

[8] Throughout this final rule non-cellulosic advanced biofuel refers to biofuel that qualifies as advanced biofuel, but does not qualify as cellulosic biofuel. RINs generated for non-cellulosic advanced biofuels have a D code of 4 or 5.

TABLE I–1—FINAL VOLUME REQUIREMENTS[a]

	2018	2019
Cellulosic biofuel (million gallons)	288	n/a
Biomass-based diesel (billion gallons)	[b]2.1	2.1
Advanced biofuel (billion gallons)	4.29	n/a
Renewable fuel (billion gallons)	19.29	n/a

A. Purpose of This Action

The national volume targets of renewable fuel that are intended to be achieved under the RFS program each year (absent an adjustment or waiver by EPA) are specified in CAA section 211(o)(2). The statutory volume targets for 2018 are shown in Table I.A–1, along with the 2017 targets for comparison. The cellulosic biofuel and BBD categories are nested within the advanced biofuel category, which is itself nested within the total renewable fuel category. This means, for example, that each gallon of cellulosic biofuel or BBD that is used to satisfy the individual volume requirements for those fuel types can also be used to satisfy the requirements for advanced biofuel and total renewable fuel.

[a] All values are ethanol-equivalent on an energy content basis, except for BBD which is biodiesel-equivalent

[b] The 2018 BBD volume requirement was established in the 2017 final rule (81 FR 89746, December 12, 2016).

TABLE I.A–1—APPLICABLE VOLUME TARGETS SPECIFIED IN THE CLEAN AIR ACT
[Billion gallons][a]

	2017	2018
Cellulosic biofuel	5.5	7.0
Biomass-based diesel	≥1.0	≥1.0
Advanced biofuel	9.0	11.0
Renewable fuel	24.0	26.0

Under the RFS program, EPA is required to determine and publish annual percentage standards for each compliance year. The percentage standards are calculated to ensure use in transportation fuel of the national "applicable volumes" of the four types of biofuel (cellulosic biofuel, BBD, advanced biofuel, and total renewable fuel) that are set forth in the statute or established by EPA in accordance with the Act's requirements. The percentage standards are used by obligated parties (generally, producers and importers of gasoline and diesel fuel) to calculate their individual compliance obligations. Each of the four percentage standards is applied to the volume of non-renewable gasoline and diesel that each obligated party produces or imports during the specified calendar year to determine their individual volume obligations with respect to the four renewable fuel types. The individual volume obligations determine the number of Renewable Identification Numbers (RINs) of each renewable fuel type that each obligated party must acquire and retire to demonstrate compliance.

[a] All values are ethanol-equivalent on an energy content basis, except values for BBD which are given in actual gallons.

EPA is establishing the annual applicable volume requirements for cellulosic biofuel, advanced biofuel, and total renewable fuel for 2018, and for BBD for 2019.[7] Table I.A–2 lists the statutory provisions and associated criteria relevant to determining the national applicable volumes used to set the percentage standards in this final rule.

[7] The 2018 BBD volume requirement was established in the 2017 final rule.

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Table I.A–2—Statutory Provisions for Determination of Applicable Volumes

Applicable volumes	Clean Air Act reference	Criteria provided in statute for determination of applicable volume
Cellulosic biofuel	211(o)(7)(D)(i)	Required volume must be lesser of volume specified in CAA 211(o)(2)(B)(i)(III) or EPA's projected volume.
	211(o)(7)(A)	EPA in consultation with other federal agencies may waive the statutory volume in whole or in part if implementation would severely harm the economy or environment of a State, region, or the United States, or if there is an inadequate domestic supply.
Biomass-based diesel	211(o)(2)(B)(ii) and (v)	Required volume for years after 2012 must be at least 1.0 billion gallons, and must be based on a review of implementation of the program, coordination with other federal agencies, and an analysis of specified factors.
	211(o)(7)(A)	EPA in consultation with other federal agencies may waive the statutory volume in whole or in part if implementation would severely harm the economy or environment of a State, region, or the United States, or if there is an inadequate domestic supply.
	211(o)(7)(E)	EPA in consultation with other federal agencies shall issue a temporary waiver of applicable volumes of BBD where there is a significant feedstock disruption or other market circumstance that would make the price of BBD fuel increase significantly. When exercising this authority, EPA is also authorized to reduce the applicable volumes of advanced and total renewable fuel by the same or a lesser volume.
Advanced biofuel	211(o)(7)(D)(i)	If applicable volume of cellulosic biofuel is reduced below the statutory volume to the projected volume, EPA may reduce the advanced biofuel and total renewable fuel volumes in CAA 211(o)(2)(B)(i)(I) and (II) by the same or lesser volume. No criteria specified.
	211(o)(7)(A)	EPA in consultation with other federal agencies may waive the statutory volume in whole or in part if implementation would severely harm the economy or environment of a State, region, or the United States, or if there is an inadequate domestic supply.
	211(o)(7)(E)	If applicable volume of biomass-based diesel is reduced, EPA may reduce the advanced biofuel and total renewable fuel volumes in CAA 211(o)(2)(B)(i)(I) and (II) by the same or lesser volume.
Total renewable fuel	211(o)(7)(D)(i)	If applicable volume of cellulosic biofuel is reduced below the statutory volume to the projected volume, EPA may reduce the advanced biofuel and total renewable fuel volumes in CAA 211(o)(2)(B)(i)(I) and (II) by the same or lesser volume. No criteria specified.
	211(o)(7)(A)	EPA in consultation with other federal agencies may waive the statutory volume in whole or in part if implementation would severely harm the economy or environment of a State, region, or the United States, or if there is an inadequate domestic supply.
	211(o)(7)(E)	If applicable volume of biomass-based diesel is reduced, EPA may reduce the advanced biofuel and total renewable fuel volumes in CAA 211(o)(2)(B)(i)(I) and (II) by the same or lesser volume.

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As shown in Table I.A–2, the statutory authorities allowing EPA to modify or set the applicable volumes differ for the four categories of renewable fuel. Under the statute, EPA must annually determine the projected volume of cellulosic biofuel production for the following year. If the projected volume of cellulosic biofuel production is less than the applicable volume specified in CAA section 211(o)(2)(B)(i)(III) of the statute, EPA must lower the applicable volume used to set the annual cellulosic biofuel percentage standard to the projected production volume. In Section III of this final rule, we present our analysis of cellulosic biofuel production and the applicable volume for 2018. This analysis is based primarily on the estimate of cellulosic biofuel production for 2018 conducted by the Energy Information Administration (EIA),[8] information reported to EPA through our Electronic Moderated Transaction System (EMTS), comments received on our proposed rule, and an evaluation of producers' production plans and progress to date following discussions with cellulosic biofuel producers.

With regard to BBD, CAA section 211(o)(2)(B) specifies the applicable volumes of BBD to be used in the RFS program only through year 2012. For subsequent years the statute sets a minimum volume of 1 billion gallons, and directs EPA, in coordination with the U.S. Departments of Agriculture (USDA) and Energy (DOE), to determine the required volume after review of implementation of the renewable fuels program and consideration of a number of factors. The BBD volume requirement must be established 14 months before the year in which it will apply. In the 2017 final rule we established the BBD volume for 2018. In Section VI of this

[8] "Letter from EIA to EPA on 2018 projected volumes," available in docket EPA–HQ–OAR–2017–0091.

preamble we discuss our assessment of statutory and other relevant factors and our final volume requirement for BBD for 2019, which has been developed in coordination with USDA and DOE. We are establishing an applicable volume of 2.1 billion gallons of BBD for use in deriving the BBD percentage standard in 2019. This volume is equal to the applicable volume of BBD established in a prior rulemaking for 2018, and would provide continued support to an industry that is a significant contributor to the pool of advanced biofuel, while at the same time setting the volume requirement in a manner anticipated to provide a continued incentive for the development of other types of advanced biofuel.

Regarding advanced biofuel and total renewable fuel, Congress provided several mechanisms through which the statutory targets could be reduced if necessary. If we reduce the applicable volume of cellulosic biofuel below the volume specified in CAA section 211(o)(2)(B)(i)(III), we also have the authority to reduce the applicable volumes of advanced biofuel and total renewable fuel by the same or a lesser amount. We refer to this as the "cellulosic waiver authority." We may also reduce the applicable volumes of any of the four renewable fuel types using the "general waiver authority" provided in CAA section 211(o)(7)(A) if EPA, in consultation with USDA and DOE, finds that implementation of the statutory volumes would severely harm the economy or environment of a State, region, or the U.S., or if there is inadequate domestic supply. We are also authorized under CAA section 211(o)(7)(E) to reduce the applicable volume of BBD established for 2018, and to make equal or lesser reductions in the 2018 applicable volumes of advanced biofuel and total renewable fuel, if we determine that there is a significant renewable feedstock disruption or other market

circumstance that would make the price of BBD increase significantly. Sections II and IV of this final rule describe our use of the cellulosic waiver authority alone to derive the volumes of advanced biofuel and total renewable fuel that are below the statutory target volumes, and our assessment that the resulting volumes can be met. We believe that reductions in the statutory targets for cellulosic biofuel, advanced biofuel and total renewable fuel for 2018 are necessary. However, in light of our review of available information, we are making those reductions under the cellulosic waiver authority alone and are not reducing them further under other waiver authorities. Thus, the reductions in both the advanced and total renewable fuel standards are directly attributable to the significant shortfall in cellulosic biofuel production, as compared to the statutory targets. A discussion of our consideration of the general waiver authority and biomass-based diesel waiver authority to further reduce the required biofuel volumes in 2018 can be found in Section V.

B. Summary of Major Provisions in This Action

This section briefly summarizes the major provisions of this final rule. We are establishing applicable volume requirements and associated percentage standards for cellulosic biofuel, advanced biofuel, and total renewable fuel for 2018; for BBD we are establishing the percentage standard for 2018 and the applicable volume requirement for 2019.

1. Approach to Setting Volume Requirements

The approach we have taken in this final rule of using the cellulosic waiver authority to reduce advanced biofuel and total renewable fuel by the same amount as the reduction in the required volume of cellulosic

biofuel is the same approach as in our proposed rule, but is a departure from our approach to using the cellulosic biofuel waiver authority in previous years. In previous years we have used the cellulosic waiver authority to reduce the advanced biofuel and total renewable fuel volume requirements by a lesser amount than the reduction in the cellulosic biofuel volume requirement to allow reasonably attainable volumes of advanced biofuels to partially backfill for missing cellulosic biofuel volumes. However, the approach we have taken for 2018 does not result in a reduction in the volume requirement for non-cellulosic advanced biofuel. While the implied statutory volume for non-cellulosic advanced biofuel increased by 500 million gallons from 2017 to 2018, through our 2017 action we effectively required early use of approximately 0.5 billion gallons of non-cellulosic advanced volume that Congress envisioned would be first used in 2018.[9] Therefore, despite using the cellulosic waiver authority to reduce the volume of advanced biofuel by the same amount as cellulosic biofuel, the advanced biofuel volume requirement for 2018 is 10 million gallons higher than the advanced biofuel volume requirement in 2017. In this rule we are reducing all three volume requirements by the same amount after considering the greenhouse gas (GHG), energy security benefits, and

[9] The statutory advanced biofuel and cellulosic biofuel requirements for 2018 are 11.0 and 7.0 billion gallons respectively. This implies a non-cellulosic advanced biofuel statutory volume of 4.0 billion gallons. The statutory advanced biofuel and cellulosic biofuel requirements for 2017 are 9.0 and 5.5 billion gallons respectively. This implies a non-cellulosic advanced biofuel statutory volume of 3.5 billion gallons. In 2017 EPA established required volumes of advanced biofuel and cellulosic biofuel of 4.28 billion and 311 million gallons respectively, implying a non-cellulosic advanced biofuel volume of 3.97 billion gallons.

anticipated costs of advanced biofuels that would occur at levels beyond those being finalized today.

Section II provides a general description of our approach to setting volume requirements in today's rule, including a review of the statutory waiver authorities and our consideration of carryover RINs. Section III provides our assessment of the 2018 cellulosic biofuel volume, based on a projection of production that reflects a neutral aim at accuracy. Sections IV and V describe our assessments of advanced biofuel and total renewable fuel, and consideration of the general and biomass-based diesel waiver authorities. Finally, Section VI provides our determination regarding the 2019 BBD volume requirement, and reflects an analysis of a set of factors stipulated in CAA section 211(o)(2)(B)(ii).

2. Cellulosic Biofuel

In the past several years the cellulosic biofuel industry has continued to make progress towards increased commercial scale production. Cellulosic biofuel production reached record levels in 2016 and has continued to grow throughout 2017, driven largely by compressed natural gas (CNG) and liquefied natural gas (LNG) derived from biogas. Liquid cellulosic biofuels, while produced in much smaller quantities than CNG/LNG derived from biogas, have been produced at steady but relatively small volumes throughout 2017. In this rule we are establishing a cellulosic biofuel volume requirement of 288 million ethanol-equivalent gallons for 2018 based on our production projection. Our projection reflects consideration of a production estimate from EIA, RIN generation data available to EPA through EMTS, comments we received on the proposed rule, the information we have received regarding individual facilities' capacities, production start dates and biofuel production plans, a review of cellulosic biofuel produc-

tion relative to EPA's projections in previous annual rules, and EPA's own engineering judgment. To project cellulosic biofuel production for 2018 we used the same basic methodology described in the proposed rule. However, we have used updated data to derive percentile values used in our production projection for liquid cellulosic biofuels and to derive the year-over-year change in the rate of production of CNG/LNG derived from biogas that is used in the projection for CNG/LNG. (See Section III for further detail on the methodology used to project cellulosic biofuel production.)

In estimating the volume of liquid cellulosic biofuel that will be made available in the U.S. in 2018, we considered all potential production sources by company and facility. This included facilities still in the commissioning or start-up phases, as well as facilities already producing some volume of cellulosic biofuel.[10] From this universe of potential liquid cellulosic biofuel sources, we identified the subset that is expected to produce commercial volumes of qualifying liquid cellulosic biofuel for use as transportation fuel, heating oil, or jet fuel by the end of 2018. To arrive at projected volumes, we collected relevant information on each facility. We then developed projected production ranges based on factors such as progress towards construction and production goals, facility registration status, production volumes achieved, and other significant factors that could potentially impact fuel production or the ability of the produced fuel to qualify for cellulosic

[10] Facilities primarily focused on research and development (R&D) were not the focus of our assessment, as production from these facilities represents very small volumes of cellulosic biofuel, and these facilities typically have not generated RINs for the fuel they have produced.

biofuel RINs. We also used this information to group these companies based on production history and to select a value within the aggregated projected production ranges that we believe best represents the most likely production volume from each group of companies in 2018.

For 2018, we are using an industry wide, rather than a facility-by-facility approach to project the production of CNG/LNG derived from biogas. We believe this approach is appropriate due to the mature state of this technology, the large number of facilities that are registered to produce cellulosic biofuel RINs for these fuels, and the fact that their volumes are likely to be affected more by market wide factors than individual company situations. Further discussion on our projection of cellulosic biofuel production in 2018, including the factors considered and the way these factors were used to determine our final cellulosic biofuel projection, can be found in Section III.

3. Advanced Biofuel

We are finalizing required advanced biofuel requirements using the same approach used in the July proposed rulemaking. As was the case at the time of proposal, the conditions that compelled us to reduce the 2017 volume requirement for advanced biofuel below the statutory target remain relevant in 2018. As for 2017, we investigated the ability of volumes of non-cellulosic advanced biofuels to backfill unavailable volumes of cellulosic biofuel in 2018. We took into account the various constraints on the ability of the market to make advanced biofuels available, the ability of the standards we set to bring about market changes in the time available, the potential impacts associated with diverting biofuels and/or biofuel feedstocks from current use to the production of advanced biofuel used in

the U.S., the fact that the biodiesel tax credit is currently not available for 2018, the proposed countervailing duties on imports of biodiesel from Argentina and Indonesia, as well as the cost of advanced biofuels. Based on these considerations we have decided to reduce the applicable volume of advanced biofuel by the same amount as we are reducing the applicable volume of cellulosic biofuels. This results in an advanced biofuel volume for 2018 that is 10 million gallons higher than the advanced biofuel volume for 2017. Although we determined that a small amount of reasonably attainable volumes of advanced biofuel could be used to backfill a portion of the missing cellulosic biofuel, for reasons described in Section IV, we are not exercising the discretion provided under the cellulosic waiver authority in a manner that would lead to that result.

As mentioned above, we are exercising our cellulosic waiver authority to reduce the statutory applicable volume of advanced biofuel to a volume requirement of 4.29 billion gallons for 2018. This applicable volume for 2018 is 10 million gallons higher than the applicable volume for advanced biofuel for 2017.

4. Total Renewable Fuel

Following our determination of the appropriate volume reduction for advanced biofuel for 2018 using the cellulosic waiver authority, we calculated what the total renewable fuel volume would be if we provide the same level of reduction using the cellulosic waiver authority. The resulting volume is 19.29 billion gallons.

5. Other Waiver Authorities

We have evaluated whether additional reductions in cellulosic biofuel, biomass-based diesel, advanced biofuel, or total renewable fuel are warranted for 2018

using either the general waiver authority or the BBD waiver authority and have determined that additional reductions are not warranted at this time.

6. 2019 Biomass-Based Diesel

In EISA, Congress specified increasing applicable volumes of BBD through 2012. Beyond 2012 Congress stipulated that EPA, in coordination with DOE and USDA, was to establish the BBD volume taking into consideration implementation of the program to date and various specified factors, providing that the required volume for BBD could not be less than 1.0 billion gallons. For 2013, EPA established an applicable volume of 1.28 billion gallons. For 2014 and 2015 we established the BBD volume requirement to reflect the actual volume for each of these years of 1.63 and 1.73 billion gallons.[11] For 2016 and 2017, we set the BBD volume requirements at 1.9 and 2.0 billion gallons respectively. Finally, for 2018 the BBD volume requirement was set at 2.1 billion gallons. We proposed to maintain this level for 2019.

Given current and recent market conditions, the advanced biofuel volume requirement is driving the production and use of biodiesel and renewable diesel volumes over and above volumes required through the separate BBD standard, and we expect this to continue. For 2019, EPA continues to believe that it would still be appropriate to provide a floor above the statutory minimum of 1 billion gallons to provide a guaranteed level of support for the continued production and use of BBD. However, we also believe that the volume of BBD supplied in previous years demonstrates that the

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[11] The 2015 BBD standard was based on actual data for the first 9 months of 2015 and on projections for the latter part of the year for which data on actual use was not available at the time.

advanced biofuel standard is capable of incentivizing additional supply of these fuels above the volume required by the BBD standard. Thus, based on a review of the implementation of the program to date and all the factors required under the statute, and in coordination with USDA and DOE, we are finalizing an applicable volume of BBD for 2019 at the proposed volume of 2.1 billion gallons.

7. Annual Percentage Standards

The renewable fuel standards are expressed as a volume percentage and are used by each producer and importer of fossil-based gasoline or diesel to determine their renewable fuel volume obligations.

Four separate percentage standards are required under the RFS program, corresponding to the four separate renewable fuel categories shown in Table I.A–1. The specific formulas we use in calculating the renewable fuel percentage standards are contained in the regulations at 40 CFR 80.1405. The percentage standards represent the ratio of the national applicable volume of renewable fuel volume to the national projected non-renewable gasoline and diesel volume less any gasoline and diesel attributable to small refineries granted an exemption prior to the date that the standards are set. The volume of transportation gasoline and diesel used to calculate the percentage standards was based on a letter provided to the EPA by EIA, as required by statute.[12] The percentage standards for 2018 are shown in Table I.B.7–1. Detailed calculations can be found in Section VII, including the projected gasoline and diesel volumes used.

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[12] "Letter from EIA to EPA on 2018 projected volumes," available in docket EPA–HQ–OAR–2017–0091.

TABLE I.B.7–1—FINAL 2018
PERCENTAGE STANDARDS

Cellulosic biofuel	0.159%
Biomass-based diesel	1.74%
Advanced biofuel	2.37%
Renewable fuel	10.67%

8. Assessment of Aggregate Compliance

By November 30 of each year we are required to assess the status of the aggregate compliance approach to land use restrictions under the definition of renewable biomass for both the U.S. and Canada. In today's action we are providing the final announcements for these administrative actions. As described in Section VIII.A, based on data provided by the USDA and using the methodology in place since 2014, we have estimated that U.S. agricultural land totaled approximately 376 million acres in 2017 and thus did not exceed the 2007 baseline acreage. This assessment means that the aggregate compliance provision can continue to be used in the U.S. for calendar year 2018.

On September 29, 2011, EPA approved the use of a similar aggregate compliance approach for planted crops and crop residue grown in Canada. As described in Section VIII.B, based on data provided by Canada, we have estimated that Canadian agricultural land totaled approximately 117.8 million acres in 2017 and thus did not exceed the 2007 baseline acreage. This assessment means that the aggregate compliance provision can continue to be used in Canada for calendar year 2018.

II. Authority and Need for Waiver of Statutory Applicable Volumes

The CAA provides EPA with the authority to enact volume requirements below the applicable volume targets specified in the statute under specific circumstances. This section discusses those authorities.

A. Statutory Authorities for Reducing Volume Targets

In CAA section 211(o)(2), Congress specified increasing annual volume targets for total renewable fuel, advanced biofuel, and cellulosic biofuel for each year through 2022, and for BBD through 2012, and authorized EPA to set volume requirements for subsequent years in coordination with USDA and DOE, and after consideration of specified factors. However, Congress also recognized that under certain circumstances it would be appropriate for EPA to set volume requirements at a lower level than reflected in the statutory volume targets, and thus provided waiver provisions in CAA section 211(o)(7).

1. Cellulosic Waiver Authority

Section 211(o)(7)(D)(i) of the CAA provides that if EPA determines that the projected volume of cellulosic biofuel production for a given year is less than the applicable volume specified in the statute, that EPA must reduce the applicable volume of cellulosic biofuel required to the projected production volume for that calendar year. In making this projection, EPA may not "adopt a methodology in which the risk of overestimation is set deliberately to outweigh the risk of underestimation" and must make a projection that "aims at accuracy." *API* v. *EPA,* 706 F.3d 474, 479 (D.C. Cir. 2013). Pursuant to this provision, EPA has set the cellulosic biofuel requirement lower than the statutory vol-

umes for each year since 2010. As described in Section III.D, the projected volume of cellulosic biofuel production for 2018 is less than the 7.0 billion gallon volume target in the statute. Therefore, for 2018, we are setting the cellulosic biofuel volume requirement at a level lower than the statutory applicable volume, in accordance with this provision.

CAA section 211(o)(7)(D)(i) also provides EPA with the authority to reduce the applicable volume of total renewable fuel and advanced biofuel in years when it reduces the applicable volume of cellulosic biofuel under that provision. The reduction must be less than or equal to the reduction in cellulosic biofuel. For 2018, we are also reducing the applicable volumes of advanced biofuel and total renewable fuel under this authority.

The cellulosic waiver authority is discussed in detail in the preamble to the 2017 final rule and that discussion is incorporated by reference.[13] See also, *API* v. *EPA,* 706 F.3d 474 (D.C. Cir. 2013) (requiring that EPA's cellulosic biofuel projections reflect a neutral aim at accuracy), *Monroe Energy* v. *EPA,* 750 F.3d 909 (D.C. Cir. 2014) (affirming EPA's broad discretion under the cellulosic waiver authority to reduce volumes of advanced biofuel and total renewable fuel), and *Americans for Clean Energy* v. *EPA* ("*ACE*"), 864 F.3d 691 (D.C. Cir. 2017) (discussed below).

In *ACE,* the court evaluated EPA's use of the cellulosic waiver authority in the 2014–2016 annual rulemaking to reduce the advanced biofuel and total renewable fuel volumes for 2014, 2015, and 2016. There, EPA used the cellulosic waiver authority to reduce the standard for advanced biofuel to a volume that was reasonably attainable, and then provided a compara-

[13] See 81 FR 89752–89753 (December 12, 2016).

ble reduction under this authority for total renewable fuel.[14] The Court of Appeals for the District of Columbia, relying on the analysis in *Monroe Energy,* reaffirmed that EPA enjoys "broad discretion" under the cellulosic waiver authority "to consider a variety of factors—including demand-side constraints in the advanced biofuels market."[15] The Court noted that the only textual limitation on the use of the cellulosic waiver authority is that it cannot exceed the amount of the reduction in cellulosic biofuel.[16] The Court contrasted the general waiver authority under CAA section 211(o)(7)(A) and the biomass based diesel waiver authority under CAA section 211(o)(7)(E), which "detail the considerations and procedural steps that EPA must take before waiving fuel requirements," with the cellulosic waiver authority, which identifies no factors regarding reductions in advanced and total renewable fuel other than the limitation that any such reductions may not exceed the reduction in cellulosic biofuel volumes.[17] The Court also concluded that the scope of EPA's discretionary authority to reduce advanced and total volumes is the same under the cellulosic waiver provision whether EPA is declining to exercise its authority to waive volumes, or choosing to do so.[18]

In this action we are reducing the statutory volume targets for advanced biofuels and total renewable fuel by equal amounts, as was our approach in using the cellulosic waiver authority in setting the 2014–2017 standards. EPA's reasoning for an equal reduction is

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[14] See 80 FR 77433–34 (December 14, 2015).

[15] *ACE* at 730.

[16] *Id.* at 733.

[17] *Id.*

[18] *Id.*

explained in the 2017 final rule.[19] We have made a determination, as described in Section IV, that the applicable volume for advanced biofuels specified in the statute for 2018 cannot be achieved and we are exercising our cellulosic waiver authority to lower the applicable volume of advanced biofuel, and to provide an equal reduction in the applicable volume of total renewable fuel. In addition, we have determined that there is likely to be adequate supply to satisfy the total renewable fuel volume derived through applying an equal volume reduction as for advanced biofuel as discussed in Section V. Therefore, we have determined that no further reductions of the total renewable fuel volume requirement are necessary to address supply concerns.[20] The resulting volumes of advanced and total renewable fuel resulting from this exercise of the cellulosic waiver authority provide for an implied volume allowance for conventional biofuel of fifteen billion gallons, equal to that envisioned by Congress for 2018.

2. General Waiver Authority

Section 211(o)(7)(A) of the CAA provides that EPA, in consultation with the Secretary of Agriculture and the Secretary of Energy, may waive the applicable volumes specified in the Act in whole or in part based on a petition by one or more States, by any person subject to the requirements of the Act, or by the EPA Administrator on his own motion. Such a waiver must be based on a determination by the Administrator, after

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[19] See 81 FR 89752–89753 (December 12, 2016). See also, 78 FR 49809–49810 (August 15, 2013); 80 FR 77434 (December 14, 2015).

[20] As described in the Response to Comments document accompanying this action, we have also determined that additional waivers are not appropriate to address either severe economic or severe environmental harm.

public notice and opportunity for comment that: (1) Implementation of the requirement would severely harm the economy or the environment of a State, a region, or the United States; or (2) there is an inadequate domestic supply.

In the October 4 document, EPA sought comment on the possible use of the general waiver authority to reduce volumes of advanced biofuel and total renewable fuel for the 2018 standards below the levels proposed in the 2018 NPRM.[21] The October 4 document provided information on historic domestic production, imports, and exports of advanced biofuel, as well as additional information, and sought comment on how that information could inform a potential determination of inadequate domestic supply or severe economic harm.

Based on an evaluation of supply and potential economic impact of the volumes of advanced and total renewable fuel that result after use of the cellulosic waiver authority, comments from stakeholders, and as further discussed in Section V, EPA is not using the general waiver authority on the basis of severe economic or environmental harm or inadequate domestic supply to further reduce those volumes for 2018. EPA's response to comments addressing possible use of the general waiver authority are provided in a memorandum to the docket[22] and in the Response to Comments (RTC) document accompanying this action.

3. Biomass-Based Diesel Waiver Authority

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[21] See 82 FR 46174 (October 4, 2017).

[22] "Assessment of waivers for severe economic harm or BBD prices for 2018," memorandum from David Korotney to docket EPA–HQ–OAR–2017–0091.

Section 211(o)(7)(E)(ii) of the CAA provides that if EPA determines that there is a significant renewable feedstock disruption or other market circumstance that would make the price of BBD increase significantly, EPA shall, in consultation with the Secretary of Energy, and the Secretary of Agriculture, issue an order to reduce, for up to a 60-day period, the annual volume requirement for BBD by an appropriate quantity that does not exceed 15 percent. The statute also stipulates that EPA is authorized to reduce applicable volumes of advanced biofuel and total renewable fuel by the same or a lesser volume than the reduction in BBD.

In the October 4 document, EPA sought comment on potential interpretations of this authority, as well as the potential use of the BBD waiver authority to reduce the 2018 volume requirement for BBD by as much as 315 million gallons, and to concurrently reduce the advanced biofuel and total renewable fuel volume requirements by as much as 473 million gallons. The notice provided information on the price of biodiesel in light of the expiration of the federal tax credit, and the potential imposition of new duties on imports of biodiesel from Argentina and Indonesia.

As described in the RTC document, EPA has determined that it would not be appropriate at this time to use the BBD waiver authority. Based on information provided in comments, as well its own analysis discussed in Section V, EPA believes that there is an insufficient basis to support a finding that the biomass based diesel prices currently in the marketplace, or reasonably anticipated in the immediate future, represent a "significant" increase in prices that would justify use of this waiver authority.

B. Treatment of Carryover RINs

Consistent with our approach in the 2013, 2014–16, and 2017 final rules, we have also considered the availability and role of carryover RINs in evaluating whether we should exercise our discretion to use the cellulosic waiver authority in setting the cellulosic, advanced, and total volume requirements for 2018. Neither the statute nor EPA regulations specify how or whether EPA should consider the availability of carryover RINs in exercising the cellulosic waiver authority.[23] As noted in the context of the rules establishing the 2014–16 and 2017 RFS standards, we believe that a bank of carryover RINs is extremely important in providing obligated parties compliance flexibility in the face of substantial uncertainties in the transportation fuel marketplace, and in providing a liquid and well-functioning RIN market upon which success of

[23] CAA section 211(o)(5) requires that EPA establish a credit program as part of its RFS regulations, and that the credits be valid to show compliance for 12 months as of the date of generation. EPA implemented this requirement though the use of RINs, which can be used to demonstrate compliance for the year in which they are generated or the subsequent compliance year. Obligated parties can obtain more RINs than they need in a given compliance year, allowing them to "carry over" these excess RINs for use in the subsequent compliance year, although use of these carryover RINs is limited to 20% of the obligated party's RVO. For the bank of carryover RINs to be preserved from one year to the next, individual carryover RINs are used for compliance before they expire and are essentially replaced with newer vintage RINs that are then held for use in the next year. For example, if the volume of the collective carryover RIN bank is to remain unchanged from 2017 to 2018, then all of the vintage 2017 carryover RINs must be used for compliance in 2018, or they will expire. However, the same volume of 2018 RINs can then be "banked" for use in the next year.

the entire program depends.[24] Carryover RINs provide flexibility in the face of a variety of circumstances that could limit the availability of RINs, including weather-related damage to renewable fuel feedstocks and other circumstances potentially affecting the production and distribution of renewable fuel.[25] On the other hand, carryover RINs can be used for compliance purposes, and in the context of the 2013 RFS rulemaking we noted that an abundance of carryover RINs available in that year, together with possible increases in renewable fuel production and import, justified maintaining the advanced and total renewable fuel volume requirements for that year at the levels specified in the statute.[26] EPA's approach to the consideration of carryover RINs in exercising our cellulosic waiver authority was affirmed in *Monroe Energy* and *ACE*.[27]

In the 2018 NPRM, EPA estimated that the size of the carryover RIN bank was then approximately 2.06 billion carryover RINs (including all D codes).[28] We pro-

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[24] See 80 FR 77482–87 (December 14, 2015) and 81 FR 89754–55 (December 12, 2016).

[25] See id., and 72 FR 23900 (May 1, 2007).

[26] See 79 FR 49794 (August 15, 2013).

[27] *Monroe Energy* v. *EPA,* 750 F.3d 909 (D.C. Cir. 2014), *ACE* at 713.

[28] This was an increase of 520 million RINs from the previous estimate of 1.54 billion carryover RINs in the 2017 final rule. This increase in the carryover RIN bank compared to that projected in the 2017 final rule was not due to an underestimate by EPA in the amount of gasoline, diesel fuel, or ethanol that was consumed in 2016, but rather was driven almost entirely by a combination of over-compliance by biodiesel producers facing an expiring biodiesel tax credit at the end of 2016 and approximately 390 million RINs that small refineries granted a hardship exemption for 2016 were not required to retire.

posed that in light of this relatively limited volume and the important functions provided by the RIN bank, that we would not set the volume requirements for 2018 in a manner that would intentionally lead to a drawdown in the bank of carryover RINs. In their comments on the 2018 NPRM, parties generally expressed two opposing points of view. Commenters representing obligated parties supported EPA's proposed decision to not assume a drawdown in the bank of carryover RINs in determining the appropriate volume requirements. These commenters reiterated the importance of maintaining the carryover RIN bank in order to provide obligated parties with necessary compliance flexibilities, better market trading liquidity, and a cushion against future program uncertainty. Commenters representing renewable fuel producers, however, contended that carryover RINs represent actual supply and should be accounted for when establishing the annual volume standards. These commenters stated that not accounting for carryover RINs goes against Congressional intent of the RFS program, deters investment in next-generation biofuels, and ignores other programmatic buffers and flexibilities such as carry-forward deficits and small refinery hardship exemptions.[29]

1. Updated Projection of Carryover RIN Volume

Based on currently available information, our estimate of the carryover RIN bank has increased to 2.22 billion RINs, an increase of 160 million RINs from the previous estimate of 2.06 billion carryover RINs in the

[29] A full description of comments received, and our detailed responses to them, is available in the Response to Comments document in the docket.

2018 NPRM.[30] Part of the update considers small refinery hardship exemptions for 2016 that were granted since the 2018 NPRM was issued. These additional small refinery hardship exemptions led to the return to the RIN marketplace of approximately 125 million 2016 RINs that would otherwise have been required for compliance by the small refineries granted an exemption for 2016.

The carryover RIN volume is 11.5 percent of the total renewable fuel volume requirement that EPA is finalizing for 2018, which is less than the 20 percent maximum limit permitted by the regulations to be carried over for use in complying with the 2018 standards.[31] However, there remains considerable uncertainty surrounding this number for a number of reasons, including the possible impact of an action to address the remand in *ACE,* the possibility of additional small refinery exemptions, and the impact of 2017 RFS compliance on the bank of carryover RINs. In addition, we note that there have been enforcement actions in past years that have resulted in the retirement of carryover RINs to make up for the generation and use of invalid RINs and/ or the failure to retire RINs for exported renewable fuel. Future enforcement actions could have similar results, and require that obligated parties and/or renewable fuel exporters settle past enforcement-related obligations in addition to the annual standards, thereby potentially creating demand for RINs greater than can be accommodated through actual renewable fuel blending in 2018. Collectively,

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[30] The calculations performed to estimate the number of carryover RINs currently available can be found in the memorandum, "Carryover RIN Bank Calculations for 2018 Final Rule," available in the docket.

[31] See 40 CFR 80.1427(a)(5).

the result of satisfying RFS obligations in 2017 and settling enforcement-related accounts could be an effective reduction in the size of the collective bank of carryover RINs. In light of these uncertainties, it is possible that the net result would be a bank of carryover RINs larger or smaller than 11.5 percent of the final 2018 total renewable fuel volume requirement.

2. EPA's Decision Regarding the Treatment of Carryover RINs

EPA has decided to maintain the proposed approach, and not set the volume requirements in the final rule with the intention or expectation of drawing down the current bank of carryover RINs. In addition, we do not believe that the availability of carryover RINs, together with the potential supply of renewable fuel in volumes higher than we are requiring though this final rule, should lead us to increase the volume requirements. In finalizing this approach, we carefully considered the comments received, including on the role of carryover RINs under our waiver authorities and the policy implications of our decision. While we have not assumed an intentional drawdown in the overall bank of carryover RINs owned by obligated parties collectively in establishing the volume requirements for 2018, we understand that some obligated parties may choose to sell or use all or part of their individual banks of carryover RINs. To the extent that they do, other obligated parties would be in a position to bank carryover RINs by using available renewable fuel or purchasing RINs representing such fuel, with the expected net result that the standards adopted in this action will have

no effect on the size of the overall bank of carryover RINs that is owned collectively by obligated parties.[32]

We believe that a balanced consideration of the possible role of carryover RINs in achieving the statutory volume objectives for advanced and total renewable fuels, versus maintaining an adequate bank of carryover RINs for important programmatic functions, is appropriate when EPA exercises its discretion under the cellulosic waiver authority, and that the statute does not specify the extent to which EPA should require a drawdown in the bank of carryover RINs when it exercises this authority.

An adequate RIN bank serves to make the RIN market liquid. Just as the economy as a whole functions best when individuals and businesses prudently plan for unforeseen events by maintaining inventories and reserve money accounts, we believe that the RFS program functions best when sufficient carryover RINs are held in reserve for potential use by the RIN holders themselves, or for possible sale to others that may not have established their own carryover RIN reserves. Were there to be no RINs in reserve, then even minor disruptions causing shortfalls in renewable fuel production or distribution, or higher than expected transportation fuel demand (requiring greater volumes of renewable fuel to comply with the percentage standards that apply to all volumes of transportation fuel, including the unexpected volumes) could lead to the need for a new waiver of the standards, undermining the market certainty so critical to the RFS program.

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[32] We expect that any renewable fuel produced in the U.S. that is not used to satisfy the 2018 renewable fuel standards will be exported, thereby not leading to an increase in the bank of 2018 RINs or carryover RINs.

However, a significant drawdown of the carryover RIN bank leading to a scarcity of RINs may stop the market from functioning in an efficient manner (*i.e.,* one in which there are a sufficient number of reasonably available RINs for obligated parties seeking to purchase them), even where the market overall could satisfy the standards. For all of these reasons, the collective carryover RIN bank provides a needed programmatic buffer that both facilitates individual compliance and provides for smooth overall functioning of the program.[33] We have evaluated the volume of carryover RINs likely available for 2018, and we believe it is prudent not to intentionally draw down this volume of carryover RINs in establishing the 2018 standards. In addition, we have considered whether the current bank of carryover RINs, together with the additional supply of renewable fuel available in 2018 above the levels we are requiring be used, would justify reduced use of the cellulosic waiver authority. For the reasons described above and in Sections IV.C and D, we do not believe this to be the case.

Therefore, for the reasons noted above, and consistent with the approach we took in the 2014–2016 and 2017 final rules, we are making a determination that, under current circumstances, an intentional drawdown of the carryover RIN bank should not be assumed in establishing the 2018 volume requirements. In addition, we do not believe that the presence of the current bank of carryover RINs, together with additional potential supplies of renewable fuel in 2018, justifies reduced use of the cellulosic waiver authority in setting the 2018 advanced biofuel and total renewable fuel volumes.

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[33] Here we use the term "buffer" as shorthand reference to all of the benefits that are provided by a sufficient bank of carryover RINs.

However, we note that we may or may not take a similar approach in future years; we will assess the situation on a case-by-case basis going forward, and take into account the size of the carryover RIN bank in the future and any lessons learned from implementing past rules.

[Content Omitted]

IV. Advanced Biofuel and Total Renewable Fuel Volumes for 2018

The national volume targets for advanced biofuel and total renewable fuel to be used under the RFS program each year through 2022 are specified in CAA section 211(o)(2)(B)(i)(I) and (II). Congress set annual renewable fuel volume targets that envisioned growth at a pace that far exceeded historical growth and, for years after 2011, prioritized that growth as occurring principally in advanced biofuels (contrary to previous growth patterns where most growth was in conventional renewable fuel, principally corn-ethanol). Congressional intent is evident in the fact that the portion of the total renewable fuel volume target in the statutory volume tables that is not required to be advanced biofuel is 15 billion gallons for all years after 2014, while the advanced volumes, driven by growth in cellulosic volumes, continue to grow through 2022 to a total of 21 billion gallons.

In this Section we discuss our use of the discretion afforded by the cellulosic waiver authority at CAA section 211(o)(7)(D)(i) to reduce volumes of advanced biofuel and total renewable fuel. We first discuss our assessment of advanced biofuel and the considerations, including comments received in response to the proposal and October 4 document, which have led us to conclude that the advanced biofuel volume target in

the statute should be reduced by the full amount permitted under the cellulosic waiver authority.

We then address total renewable fuel in the context of our interpretation, articulated in previous annual rulemakings, that advanced biofuel and total renewable fuel should be reduced by the same amount under the cellulosic waiver authority. In Section V we discuss our consideration of additional reductions for both advanced biofuel and total renewable fuel beyond those permitted under the cellulosic waiver authority, using other waiver authorities provided by the statute.

To begin, we have evaluated the capabilities of the market and are making a finding that the 11.0 billion gallons specified in the statute for advanced biofuel cannot be reached in 2018. This is primarily due to the expected continued shortfall in cellulosic biofuel; production of this fuel type has consistently fallen short of the statutory targets by 95 percent or more, and as described in Section III, we project that it will fall far short of the statutory target of 7.0 billion gallons again in 2018. In addition, although for the 2016 and 2017 standards we determined that the projected reasonably attainable supply of non-cellulosic advanced biofuel and other considerations justified establishing standards that included a partial backfill of the shortfall in cellulosic biofuel with advanced biofuel, for reasons described in this section we are reducing the advanced biofuel applicable volume by the full amount of the shortfall in cellulosic biofuel for 2018.

In previous years when exercising the cellulosic waiver authority to determine the required volume of advanced biofuel, we have taken into account the availability of advanced biofuels, their energy security and GHG impacts, and the apparent intent of Congress as reflected in the statutory volumes tables to

substantially increase the use of advanced biofuels over time, as well as factors such as increased costs associated with the use of advanced biofuels and the environmental and food competition concerns raised by some commenters. In considering these factors, in those years, we have concluded that it was appropriate to set the advanced biofuel standard in a manner that would allow the partial backfilling of missing cellulosic volumes with non-cellulosic advanced biofuels. For purposes of this final rule we have again taken these factors into consideration, but rely more heavily on consideration of cost as a result of a stronger policy focus on the economic impacts of the RFS program to conclude that such backfilling with non-cellulosic advanced biofuel volumes should not be required in 2018. In other words, we are reducing the statutory volume target for advanced biofuel by the same amount as the reduction in cellulosic biofuel. This results in the non-cellulosic component of the advanced biofuel volume requirement being equal to the implied statutory volume of 4.00 billion gallons. We believe this new approach to balancing relevant considerations and exercising our discretion under the cellulosic waiver authority is permissible under the statute, and consistent with the principles articulated in *FCC* v. *Fox TV Stations* (556 US. 502, 514–15 (2009)), regarding circumstances when an agency may appropriately depart from prior policy. In making this final determination for 2018, we have considered comments on the appropriate balancing of factors under the cellulosic waiver authority that were provided by stakeholders in response to the proposal and the October 4 document, as discussed in the accompanying RTC document.

We note that the predominant non-cellulosic advanced biofuels available in the near term are advanced

biodiesel and renewable diesel.[76] We expect a decreasing rate of growth in the availability of feedstocks used to produce these fuel types. In addition, we expect diminishing GHG benefits and higher per gallon costs as the required volumes of advanced biodiesel and renewable diesel increase. These outcomes are a result of the fact that the lowest cost and most easily available feedstocks are typically used first, and each additional increment of advanced biodiesel and renewable diesel requires the use of feedstocks that are incrementally more costly and/or more difficult to obtain. Moreover, to the extent that higher advanced biofuel requirements cannot be satisfied through growth in the production of advanced biofuel feedstocks, they would instead be satisfied through a re-direction of such feedstocks from competing uses. Parties that were formerly using these feedstocks are likely to replace the advanced biofuel feedstocks with the lowest cost alternatives, likely derived from palm or petroleum sources, leading to lower overall GHG emission benefits. There would also likely be market disruptions and increased burden associated with shifting feedstocks among the wide range of companies that are relying on them today and which have optimized their processes to use them. Higher advanced biofuel standards could also be satisfied by diversion of foreign advanced biofuel from foreign markets, and there would likely be diminished benefits associated with such diversions. Taking these considerations into account, we believe, as discussed in more detail below, that we should not exercise our discretion under the

[76] While sugarcane ethanol can also contribute to the supply of advanced biofuel, in recent years, supply of sugarcane ethanol has been considerably lower than supply of advanced biodiesel or renewable diesel.

cellulosic waiver authority to set the advanced biofuel volume requirement at a level that would lead to such diversions.

Furthermore, two other factors have added uncertainty regarding advanced biofuel volumes that are reasonably attainable and appropriate. The first is the fact that the tax credit for biodiesel has not been renewed, and if renewed could be in the form of a producer's tax credit rather than a blender's tax credit.[77] The second is the preliminary determination by the Department of Commerce that countervailing duties should be imposed on biodiesel imports from Argentina and Indonesia.[78]

We believe that the factors and considerations noted above are all appropriately considered in our exercise of the broad discretion provided under the cellulosic waiver authority, and that a comprehensive consideration of these factors supports our use of the authority. Some of the considerations discussed in this final rule are related to the availability of non-cellulosic advanced biofuels (*e.g.,* historic data on domestic supply, expiration of the biodiesel blenders' tax credit, potential imports of biodiesel in light of the Commerce Departments preliminary determination on countervailing duties on biodiesel imports from Argentina and Indonesia, potential imports of sugarcane ethanol, and anticipated decreasing growth in production of feedstocks for advanced biodiesel and renewable diesel), while others focus on the potential benefits and costs

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[77] See American Renewable Fuel and Job Creation Act of 2017, S.944, 115th Cong. (2017).

[78] "Commerce Finds Countervailable Subsidization of Imports of Biodiesel from Argentina and Indonesia," available in EPA docket number EPA–HQ–OAR–2017–0091.

of requiring use of available volumes (*e.g.,* relative cost of advanced biofuels to the petroleum fuels they displace, GHG reduction benefits and energy security benefits). Having determined that we should not exercise the discretion afforded EPA under the cellulosic waiver authority so as to require the use of advanced biofuel volumes that would lead to diversion of advanced feedstocks from other uses or diversion of advanced biofuels from foreign sources, our analytical approach to identifying the appropriate volume requirement is to first identify volumes that we believe would be reasonably attainable in 2018 without such feedstock or fuel diversions, and then discuss whether or not other considerations, such as cost and GHG impacts, indicate that it would be appropriate to set the advanced biofuel volume requirement so as to require use of such volumes to partially backfill for missing cellulosic volumes.

The net impact of our exercise of the cellulosic waiver authority is that after waiving the cellulosic biofuel volume down to the projected available level, and applying the same volume reduction to the statutory volume target for advanced biofuel, the resulting volume requirement for advanced biofuel for 2018 is 10 million gallons more than the applicable volume used to derive the 2017 percentage standard. Furthermore, after applying the same reduction to the statutory volume target for total renewable fuel, the volume requirement for total renewable fuel is also 10 million gallons more than the applicable volume used to derive the 2017 percentage standard. The remainder of this section provides our justification for this approach to the determination of the volume requirements for advanced biofuel and total renewable fuel. Section V discusses our consideration of further reductions in either advanced biofuel or total renewable fuel using

either the general waiver authority or the BBD waiver authority, and our justification for not applying such further reductions.

A. Volumetric Limitation on Use of the Cellulosic Waiver Authority

As described in Section II.A, when making reductions in advanced biofuel and total renewable fuel under the cellulosic waiver authority, the statute limits those reductions to no more than the reduction in cellulosic biofuel. As described in Section III.D, we are establishing a 2018 applicable volume for cellulosic biofuel of 288 million gallons, representing a reduction of 6,712 million gallons from the statutory target of 7,000 million gallons. As a result, 6,711 million gallons is the maximum volume reduction for advanced biofuel and total renewable fuel that is permissible using the cellulosic waiver authority. Use of the cellulosic waiver authority to this maximum extent would result in volumes of 4.29 and 19.29 billion gallons for advanced biofuel and total renewable fuel, respectively.[79]

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[79] When expressing volumes in billion gallons, we use standard rounding methods to two decimal places, as done in previous annual standard-setting rulemakings. Volumes are sometimes shown in million gallons for clarity, but it is volumes in billion gallons that are used to calculate the applicable percentage standards.

TABLE IV.A–1—LOWEST PERMISSIBLE VOLUMES USING ONLY THE CELLULOSIC WAIVER AUTHORITY
[million gallons]

	Advanced biofuel	Total renewable fuel
Statutory target	11,000	26,000
Maximum reduction permitted under the cellulosic waiver authority	6,712	6,712
Lowest 2018 volume requirement permitted using only the cellulosic waiver authority	4,288	19,288

We are authorized under the cellulosic waiver authority to reduce the advanced biofuel and total renewable fuel volumes "by the same or a lesser" amount as the reduction in the cellulosic biofuel volume. As discussed in Section II.A, EPA has broad discretion in using the cellulosic waiver authority in instances where its use is authorized under the statute, since Congress did not specify factors that EPA must consider in determining whether to use the authority or what the appropriate volume reductions (within the range permitted by statute) should be. This broad discretion was affirmed in both *Monroe* and *ACE*.[80] Thus, EPA could potentially set the 2018 advanced biofuel standard at a level that is designed to partially backfill for the shortfall in cellulosic biofuel. As discussed below, doing so would result in perhaps an additional 110 million gallons of advanced biofuel. However, based on our consideration of the factors described in more detail below, we are using the full extent of the cellulosic waiver authority in deriving volume requirements for 2018.[81]

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[80] See *ACE* at 730–35.

[81] We specify the volume requirements as billion gallons with two decimal places to be consistent with the volume targets as given in the statute. The only exception is for cellulosic biofuel which we specify in million gallons due to the substantial reduction from

B. Reasonably Attainable Volumes of Advanced Biofuel

It is appropriate to consider the availability of advanced biofuel, both to inform our exercise of the cellulosic waiver authority and to ascertain whether there might be an "inadequate domestic supply" justifying use of the general waiver authority. As the Court noted in *ACE,* EPA may consider demand-side considerations in addition to supply-side considerations when it assesses "reasonably attainable" volumes for purposes of its cellulosic waiver assessment. However, EPA may not consider demand-side factors in assessing whether there is an "inadequate domestic supply" that would justify use of the general waiver authority.[82] Our assessment of reasonably attainable volumes of advanced biofuel is described below.

In *ACE,* the Court noted that in assessing what volumes are "reasonably attainable," EPA had considered the availability of feedstocks, domestic production capacity, imports, and market capacity to produce, distribute, and consume renewable fuel.[83] We are taking a similar approach for 2018, with the added consideration of the possibility that higher volume requirements would lead to "feedstock switching" or diversion of advanced biofuels from use in other countries, which we took into account in setting the 2017 volume requirements and, we believe, are appropriate considerations under the broad discretion provided by the cellulosic waiver authority.

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the statutory target. However, calculations are typically shown in million gallons for all four standards for clarity.

[82] See *ACE* at 734 and 696.

[83] *ACE* at 735–36.

As noted above, a higher advanced biofuel volume requirement has a greater potential to increase the incentive for switching advanced biofuel feedstocks from existing uses to biofuel production. Such market reactions could cause disruptions and/or price increases in the non-biofuel markets that currently use these feedstocks. Increasing the required volumes of advanced biofuels without giving the market adequate time to adjust by increasing supplies could also result in diversion of advanced biofuels from foreign countries to the U.S. without increasing total global volumes. We believe it is likely that the parties that formerly used advanced biofuel feedstocks would seek to replace the advanced biofuel feedstocks with the cheapest alternatives, likely products derived from palm oil or petroleum, rather than forgoing the use of oil-based products. Increasing volumes of advanced biofuels used in the U.S. in this way (by shifting the end use of advanced feedstocks to biofuel production and satisfying the current markets for these advanced feedstocks with non-qualifying or petroleum based feedstocks, or by simply shifting advanced biodiesel or renewable diesel from foreign to domestic use—referred to for simplicity as "feedstock/fuel diversions") would therefore likely not produce the GHG benefits that would otherwise be expected. We have decided not to set the advanced biofuel volume requirement at a level that would require such feedstock/fuel diversions. Our individual assessments of reasonably attainable volumes of advanced biofuels reflect this approach.

That is, while we refer to them as "reasonably attainable" volumes for convenience, they represent those volumes that are not likely to lead to feedstock/fuel diversions. Greater volumes could likely be made available if such diversions were not of concern.

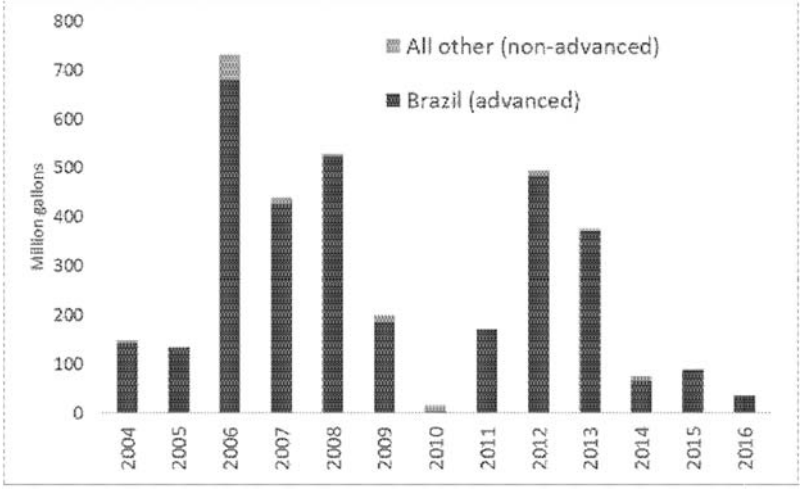
1. Imported Sugarcane Ethanol

The predominant available source of advanced biofuel other than cellulosic biofuel and BBD is imported sugarcane ethanol. In setting both the 2016 and 2017 standards, we determined that 200 million gallons of imported sugarcane ethanol would be reasonably attainable. In deriving this estimate of sugarcane ethanol, we attempted to balance indications of lower potential imports from recent data with indications that higher volumes were possible based on older data. We also pointed to the high variability in ethanol import volumes in the past (including of Brazilian sugarcane ethanol, the predominant form of imported ethanol, and the only significant source of imported advanced ethanol), increasing gasoline consumption in Brazil, and variability in Brazilian production of sugar as reasons that it would be inappropriate to assume that sugarcane ethanol imports would reach the much higher levels suggested by some stakeholders.

The data on 2016 ethanol imports suggests that we overestimated the volume of sugarcane ethanol imports for that year. Despite the fact that the applicable standards for 2016 were set prior to the beginning of 2016, and despite suggestions from UNICA [84] that 2016 imports could reach as high as 2 billion gallons, total ethanol imports only reached 34 million gallons.

[84] UNICA is the Brazilian Sugarcane Industry Association.

Figure IV.B.1-1
Historical Ethanol Imports[a]



Source: "US Imports of Fuel Ethanol from EIA, "docket EPA-HQ-OAR-2017-0091.

Available data for imports in 2017 similarly suggests that imports are again likely to fall well below the 200 million gallons that we assumed when setting the 2017 standards; for January through August of 2017, total imports of sugarcane ethanol were 75 million gallons; by the end of 2017, total imports of sugarcane ethanol might be about 100 million gallons.[85] The combined experience for 2016 and 2017 suggests that 200 million gallons is too high for the purposes of projecting reasonably attainable volumes of advanced bio-

[a] Imports from Brazil include those that are transmitted through the Caribbean Basin Initiative (CBI) and Central America Free Trade Agreement (CAFTA), and are produced from sugarcane. Imports from other countries are typically not produced from sugarcane and do not qualify as advanced biofuel.

[85] "Imports of ethanol 2011–2017," available in docket EPA–HQ–OAR–2017–0091.

fuel for 2018. At the same time, higher import volumes than those which occurred in 2016 are clearly possible, as reflected by imports seen in prior years. Taking all of these considerations into account, we are using 100 million gallons of imported sugarcane ethanol for the purposes of projecting reasonably attainable volumes of advanced biofuel for 2018. This level reflects a balancing of the information available to EPA at this time; both the lower import volumes that have occurred more recently with the higher volumes that are possible based on earlier years.

We note that the future projection of imports of sugarcane ethanol is inherently imprecise, and that actual imports in 2018 could be lower or higher than 100 million gallons. Factors that could result in import volumes below 100 million gallons include weather and harvests in Brazil, world ethanol demand and prices, and constraints associated with the E10 blendwall in the U.S. Also, global sugar consumption has continued to increase steadily, while production has decreased. If the trend continues, Brazilian production of sugar could increase, with a concurrent reduction in production of ethanol.[86] On the other hand, the world average price of sugar has been projected to remain relatively flat between 2016 and 2018, suggesting little change in sugar production and implying that ethanol production in Brazil might likewise remain unchanged.[87] After considering these factors, and in light of the high degree of variability in historical imports of sugarcane ethanol, we believe that 100 million gallons is a reasonable projection for 2018.

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[86] "Sugar—World Markets and Trade," USDA, November 2016.

[87] "Commodity Markets Outlook," World Bank Group, January 2017.

2. Biodiesel and Renewable Diesel

With regard to biodiesel and renewable diesel, there are many different factors that could potentially influence the *total* reasonably attainable volume of these fuels (including both advanced and non-advanced forms) used as transportation fuel or heating oil in the U.S.[88] These factors could include the availability of qualifying biodiesel and renewable diesel feedstocks, and the production capacity of biodiesel and renewable diesel facilities (both in the U.S. and internationally). The degree to which these and other factors may affect the total supply of both advanced and conventional forms of biodiesel and renewable diesel in 2018, is discussed in a memo to the docket.[89]

However, the primary considerations in our determination of the reasonably attainable volumes of *advanced* biodiesel and renewable diesel for 2018 are data on the use of advanced biodiesel and renewable diesel in previous years, the uncertain impact of the continued absence of the biodiesel tax credit and proposed tariffs on biodiesel from certain countries on biodiesel production and importation, the projected growth in production of advanced biodiesel and renewable diesel feedstocks in 2018.[90] A review of the volumes of advanced

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[88] For a further discussion of the factors that influence the availability of biodiesel and renewable diesel see Section V.B.2 of the preamble and a further discussion of these factors from the 2017 final rule (81 FR 89781–89789, December 12, 2016).

[89] "Market impacts of biofuels," memorandum from David Korotney to docket EPA–HQ–OAR–2017–0091.

[90] Throughout this section we refer to advanced biodiesel and renewable diesel as well as advanced biodiesel and renewable diesel feedstocks. In this context, advanced biodiesel and renewable diesel refer to any biodiesel or renewable diesel for which RINs can be generated that satisfy an obligated party's advanced

biodiesel and renewable diesel used in previous years is especially useful in projecting the potential for growth in the production and use of such fuels, since for these fuels there are a number of complex and inter-related factors beyond simply the total production capacity for biodiesel and renewable diesel and ability to distribute these fuels (including the availability of advanced feedstocks, the expiration of the biodiesel tax credit, and other market-based factors) that are likely to affect the total supply. We also believe the likely growth in production of feedstocks used to produce these fuels is an important factor to consider. This is because the energy security and GHG reduction value associated with the growth in the use of advanced biofuels is greater when that growth is associated with an increase in advanced feedstock production, rather than a switching of existing advanced feedstocks from other uses or the diversion of advanced biodiesel and renewable diesel from foreign markets if the parties that previously used the advanced biofuel or feedstocks replace these oils with low cost palm or petroleum derived products, as we believe would likely be the case in 2018. Such feedstock switching or fuel diversion could result in unintended negative consequences, such as market disruption in other markets where such oils are used,

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biofuel obligation (*i.e.,* D4 or D5 RINs). An advanced biodiesel or renewable feedstock refers to any of the biodiesel, renewable diesel, jet fuel, and heating oil feedstocks listed in Table 1 to § 80.1426 or in petition approvals issued pursuant to § 80.1416, that can be used to produce fuel that qualifies for D4 or D5 RINs. These feedstocks include, for example, soy bean oil; oil from annual cover crops; oil from algae grown photosynthetically; biogenic waste oils/fats/greases; non-food grade corn oil; camelina sativa oil; and canola/rapeseed oil (See pathways F, G, and H of Table 1 to § 80.1426).

which could offset some of the anticipated benefits of the production and use of advanced biofuels.

The volume of advanced biodiesel and renewable diesel projected to be available based on a consideration of these factors is less than the maximum volume of biodiesel and renewable diesel we believe could be produced (based solely on an assessment of the available production capacity) or consumed (based on an assessment of the ability of the market to distribute and use biodiesel and renewable diesel). Production capacity and the ability for the market to distribute and use biodiesel and renewable diesel are therefore not constraining factors in our assessment of the reasonably attainable volume of advanced biodiesel and renewable diesel in 2018.

Before considering the projected growth in the production of qualifying feedstocks that could be used to produce advanced biodiesel and renewable diesel, it is helpful to review the volumes of biodiesel and renewable diesel that have been used in the U.S. in recent years. While historic data and trends alone are insufficient to project the volumes of biodiesel and renewable diesel that could be provided in future years, historic data can serve as a useful frame of reference in considering future volumes. Past experience suggests that a high percentage of the biodiesel and renewable diesel used in the U.S. (from both domestic production and imports) qualifies as advanced biofuel.[91] In previous years, biodiesel and renewable diesel produced in the

[91] From 2011 through 2016 over 95% of all biodiesel and renewable diesel supplied to the U.S. (including domestically-produced and imported biodiesel and renewable diesel) qualified as advanced biodiesel and renewable diesel (9,372 million gallons of the 9,850 million gallons) according to EMTS data.

U.S. has been almost exclusively advanced biofuel.[92] Imports of advanced biodiesel have increased in recent years, however, as seen in Table IV.B.2–1. Volumes of imported advanced biodiesel and renewable diesel have varied significantly from year to year, as they are impacted both by domestic and foreign policies, as well as economic factors.

TABLE IV.B.2–1—ADVANCED (D4 AND D5) BIODIESEL AND RENEWABLE DIESEL FROM 2011 TO 2016
[Million gallons][a]

	2011	2012	2013	2014[b]	2015[b]	2016
Domestic Biodiesel	967	1,014	1,376	1,303	1,253	1,633
(Annual Change)	(N/A)	(+47)	(+362)	(-73)	(-50)	(+380)
Domestic Renewable Diesel	58	11	92	155	175	221
(Annual Change)	(N/A)	(-47)	(+81)	(+63)	(+20)	(+46)
Imported Biodiesel	44	40	156	130	261	561
(Annual Change)	(N/A)	(-4)	(+116)	(-26)	(+131)	(+300)
Imported Renewable Diesel	0	28	145	129	121	170
(Annual Change)	(N/A)	(+28)	(+117)	(-16)	(-8)	(+49)
Exported Biodiesel and Renewable Diesel	48	102	125	134	133	129
(Annual Change)	(N/A)	(+54)	(+23)	(+9)	(-1)	(-4)
Total	1021	991	1,644	1,583	1,677	2,456
(Annual Change)	(N/A)	(-30)	(+653)	(-61)	(+94)	(+779)

[92] From 2011 through 2016 over 99.9% of all the domestically produced biodiesel and renewable diesel supplied to the U.S. qualified as advanced biodiesel and renewable diesel (8,258 million gallons of the 8,265 million gallons) according to EMTS data.

[a] All data for 2011–2016 from EMTS. EPA reviewed all advanced biodiesel and renewable diesel RINs retired for reasons other than demonstrating compliance with the RFS standards and subtracted these RINs from the RIN generation totals for each category in the table above to calculate the supply in each year.

[b] RFS required volumes for these years were not established until December 2015.

TABLE IV.B.2–2—CONVENTIONAL (D6) BIODIESEL AND RENEWABLE DIESEL FROM 2011 TO 2016
[Million gallons][a]

	2011	2012	2013	2014[b]	2015[b]	2016
Domestic Biodiesel	0	0	6	1	0	0
(Annual Change)	(N/A)	(+0)	(+6)	(-5)	(+0)	(+0)
Domestic Renewable Diesel	0	0	0	0	0	0
(Annual Change)	(N/A)	(+0)	(+0)	(+0)	(+0)	(+0)
Imported Biodiesel	0	0	31	52	74	113
(Annual Change)	(N/A)	(+0)	(+31)	(+21)	(+22)	(+39)
Imported Renewable Diesel	0	0	53	0	106	43
(Annual Change)	(N/A)	(+0)	(+53)	(-53)	(+106)	(-63)
Exported Biodiesel and Renewable Diesel	0	0	0	0	0	1
(Annual Change)	(N/A)	(+0)	(+0)	(+0)	(+0)	(+1)
Total	0	0	90	53	180	155
(Annual Change)	(N/A)	(+0)	(+90)	(-37)	(+127)	(-25)

Since 2011 the year-over-year changes in the volume of advanced biodiesel and renewable diesel in the U.S. have varied greatly, from a low of negative 61 million gallons from 2011 to 2012 to a high of 779 million gallons from 2015 to 2016. These changes were likely influenced by a number of factors such as the cost of biodiesel feedstocks and petroleum diesel, the status of the biodiesel blenders tax credit, growth in marketing of biodiesel at high volume truck stops and centrally fueled fleet locations, demand for biodiesel and renewable diesel in other countries, biofuel policies in both the U.S. and foreign countries, and the volumes of renewable fuels (particularly advanced biofuels) required by the RFS. This historical information does not indicate that the maximum previously observed

[a] All data for 2011–2016 from EMTS. EPA reviewed all conventional biodiesel and renewable diesel RINs retired for reasons other than demonstrating compliance with the RFS standards and subtracted these RINs from the RIN generation totals for each category in the table above to calculate the supply in each year.

[b] RFS required volumes for these years were not established until December 2015.

increase of 779 million gallons of advanced biodiesel and renewable diesel would be reasonable to expect from 2017 to 2018, nor does it indicate that the low growth rates observed in other years represent the limit of potential growth in 2018. Rather, these data illustrate both the magnitude of the increases in advanced biodiesel and renewable diesel in previous years and the significant variability in these increases.

The historic data indicates that the biodiesel tax policy in the U.S. can have a significant impact on the supply of biodiesel and renewable diesel in any given year. While the biodiesel blenders tax credit has applied in each year from 2010–2016, it has only been in effect during the calendar year in 2011, 2013 and 2016, while other years it has been applied retroactively. The biodiesel blenders tax credit expired at the end of 2009 and was re-instated in December 2010 to apply retroactively in 2010 and extend through the end of 2011. Similarly, after expiring at the end of 2011, 2013, and 2014 the tax credit was re-instated in January 2013 (for 2012 and 2013), December 2014 (for 2014), and December 2015 (for 2015 and 2016).

Each of the years in which the biodiesel blenders tax credit was in effect during the calendar year (2013 and 2016) resulted in significant increases in the supply of advanced biodiesel and renewable diesel over the previous year (653 million gallons and 779 million gallons respectively). However, following this large increase in 2013, the increase in the supply of advanced biodiesel and renewable diesel in 2014 and 2015 was minimal, only 33 million gallons from 2013 to 2015. This pattern is likely the result of both accelerated production and/or importation of biodiesel and renewable diesel in the final few months of 2013 to take advantage of the expiring tax credit as well as relatively lower volumes of

biodiesel and renewable diesel production and import in 2014 and 2015 than would have occurred if the tax credit had been in place.[93]

We believe it is reasonable to anticipate a similar production pattern in 2016 through 2018 as observed in 2013 through 2015; that increases in the volumes of advanced biodiesel and renewable diesel will be modest in 2017 and 2018, following the significant increase in 2016. In 2013 the tax credit was in place through the entire year. This was followed by two years (2014 and 2015) in which the tax credit was not in place, but was eventually reinstated retroactively. Similarly, the tax credit in place through 2016, but at the time of this rulemaking not applicable to 2017 or 2018.[94] Available RIN generation data further supports this pattern. Very high volumes of advanced biodiesel and renewable diesel were supplied in the last quarter of 2016, likely driven by a desire to capture the expiring tax credit, while significantly smaller volumes of these fuels were supplied in the first quarter of 2017.[95] Data on advanced biodiesel and renewable diesel RIN generation in 2017 was available through September at the time the

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[93] We also acknowledge that the fact that EPA did not finalize the required volumes of renewable fuel under the RFS program for 2014 and 2015 until December 2015 likely had an impact on the volume of advanced biodiesel and renewable diesel supplied in these years.

[94] At this time, it is uncertain whether the tax credit would be retroactively applied to 2017 or applied in any manner (prospectively or retroactively) in 2018.

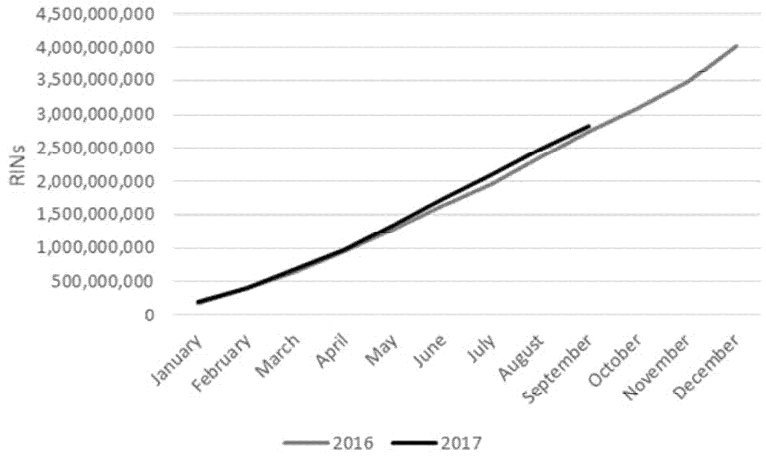
[95] According to data on EPA's public Web site, RINs were generated for 823 million gallons of biomass-based diesel in the last quarter of 2016 while RINs were generated for 444 million gallons of biomass-based diesel in the first quarter of 2017. The vast majority of advanced biodiesel and renewable diesel qualifies as biomass-based diesel.

analyses were performed for this rulemaking. Our review of this data suggests that the generation of RINs for advanced biodiesel and renewable diesel in 2017 (through September) is slightly higher than RIN generation for these fuels during the same time period in 2016 (see Figure IV.B.2–1 below). Total 2016 RIN generation for advanced biodiesel and renewable diesel through September 2016 was 2.76 billion RINs, while total 2017 RIN generation for these fuels through September 2017 was 2.82 billion RINs. Total supply of advanced biodiesel and renewable diesel in 2016 was 2.46 billion gallons, suggesting that a total supply of approximately 2.5 billion gallons in 2017 (slightly higher than the volume supplied in 2016) is likely.[96] This is consistent with our projection of advanced biodiesel and renewable diesel in the 2017 rule (2.4 billion gallons) and expectations based on RIN generation patterns in previous years of modest increases in the supply of advanced biodiesel and renewable diesel in the years following the expiration of the biodiesel tax credit. This data also supports our expectation that the reasonably attainable volume of advanced biodiesel and renewable diesel in 2018 will reflect modest increases from the reasonably attainable volumes of these fuels in 2016 and 2017. It is not clear from this data whether or not higher RFS volume requirements alone would

[96] The supply of advanced biodiesel and renewable diesel in 2016 accounts for all RIN generation, as well as all RIN retirements for reasons other than compliance with the annual standards. At this time, we do not have sufficient data to compare RIN retirements for reasons other than compliance with the annual standards in 2017 to those in 2016, as this data often lags RIN generation by several months. However, at this time we have no reason to believe RINs retired for reasons other than compliance with the annual standards in 2017 would be significantly different that retirements for the same reasons in 2017.

be sufficient to drive significant increases in the supply of advanced biodiesel and renewable diesel in the absence of a tax credit.

Figure IV.B.2-1
Cumulative RIN Generation for Advanced Biodiesel and Renewable Diesel (2016-2017)



After reviewing the historical supply of advanced biodiesel and renewable diesel and consideration of the possible impact of the expiration of the biodiesel tax credit (discussed above), EPA next considered the expected increase in the availability of advanced biodiesel and renewable diesel feedstocks in 2018. We acknowledge that an increase in the required use of advanced biodiesel and renewable diesel could be realized through a diversion of advanced feedstocks from other uses, or a diversion of advanced biodiesel and renewable diesel from existing markets in other countries. We perceive the net benefits associated with such increased advanced biofuel and renewable fuel volumes to be significantly less than the net benefits associated with the production of additional advanced biodiesel and renewable diesel with the use of newly-

available advanced feedstocks due to the likelihood that parties that previously used advanced biofuel feedstocks will replace them with low cost palm or petroleum derived products. This is both because of the potential disruption and associated cost impacts to other industries resulting from feedstock switching, and a reduced GHG reduction benefit related to use of feedstocks for biofuel production that would have been used for other purposes and which must then be backfilled with other feedstocks with potentially greater GHG emissions. Similarly, increasing the supply of biodiesel and renewable diesel to the U.S. by diverting fuel that would otherwise have been used in other countries results in lesser GHG benefits than if the supply of these fuels was increased through additional biofuel production, especially if this diversion results in increased consumption of petroleum fuels in the countries that would have otherwise consumed the biodiesel or renewable diesel. By focusing our assessment of the potential growth in the reasonably attainable volume of biodiesel and renewable diesel on the expected growth in the production of advanced feedstocks (rather than the total supply of these feedstocks in 2018, which would include feedstocks currently being used for non-biofuel purposes), we are attempting to minimize the incentives for the RFS program to increase the supply of advanced biodiesel and renewable diesel through feedstock switching or diverting biodiesel and renewable diesel from foreign market to the U.S.

Advanced biodiesel and renewable diesel feedstocks include both waste oils, fats and greases and oils from planted crops. While we believe a small increase in supply of waste oils, fats, and greases may be possible in 2018, we believe this increase is limited as most of these oils, fats, and greases are already being recovered and used in biodiesel and renewable diesel production

or for other purposes. Many of the planted crops that supply vegetable oil for advanced biodiesel and renewable diesel production are primarily grown for purposes other than providing feedstocks for biodiesel and renewable diesel, such as for livestock feed with the oil that is used as feedstock for renewable fuel production a co-product or by-product.[97] This is true for soy beans and corn, which are the two largest sources of feedstock from planted crops used for biodiesel production in the U.S.[98] We do not believe that the increased demand for soybean oil or corn oil will result in an increase in soybean or corn prices large enough to induce significant changes in agricultural activity, at least for the relatively modest changes in advanced biodiesel and renewable diesel feedstock demand that we envision as a result of the RVOs we are finalizing in this rule. The vegetable oils produced are not the primary source of revenue for these crops, meaning that the planted acres of these crops are likely to be based on broader economic factors, rather than on demand for vegetable oil to produce biofuels or for other markets.

Increasing the demand for advanced biodiesel and renewable diesel beyond the volumes that could be made from the projected increase in the feedstocks used

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[97] For example, corn oil is a co-product of corn grown primarily for feed or ethanol production, while soy and canola oil are primarily grown as livestock feed.

[98] According to EIA data 6,096 million pounds of soy bean oil and 1,306 million pounds of corn oil were used to produce biodiesel in the U.S. in 2016. Other significant sources of feedstock were yellow grease (1,389 million pounds), canola oil (1,130 million pounds), white grease (578 million pounds), tallow (332 million pounds), and poultry fat (220 million pounds). Numbers from EIA's February 2017 Monthly Biodiesel Production Report. Available at *https://www.eia.gov/biofuels/biodiesel/production/archive/2016/2016_12/biodiesel.pdf*.

to produce these fuels would likely require diverting volumes of advanced biodiesel and renewable diesel (or the feedstocks used to produce these fuels) from existing markets to be used to produce biofuels supplied to the U.S. Increasing the short-term supply of advanced biodiesel and renewable diesel to the U.S. in this manner (simply shifting the end use of advanced feedstocks to biodiesel and renewable diesel production and meeting non-biofuel demand for these feedstocks with conventional renewable and/or petroleum based feedstocks or diverting advanced biodiesel and renewable diesel from foreign markets to the U.S.) may not advance the full GHG or energy security goals of the RFS program. In a worst case scenario, higher standards could cause supply disruptions to a number of markets as biodiesel and renewable diesel producers seek additional supplies of advanced feedstocks and the parties that previously used these feedstocks, both within and outside of the fuels marketplace, seek out alternative feedstocks. Similarly, advanced biodiesel and renewable diesel could be diverted to the U.S. from foreign countries and displaced with petroleum fuels. These actions could result in significant cost increases, for both biodiesel and renewable diesel as well as other products produced from renewable oils, with reduced GHG benefits.

We believe the most reliable source for projecting the expected increase in vegetable oils in the U.S. is USDA's World Agricultural Supply and Demand Estimates (WASDE). According to the September 2017 WASDE report, domestic vegetable oil production is expected to increase by 0.33 million metric tons in 2018, from 11.42 million metric tons in the 2016/2017 agricultural marketing year to 11.75 million metric

tons in the 2017/2018 agricultural marketing year.[99] This quantity of vegetable oils (0.33 million metric tons) could be used to produce approximately 94 million gallons of advanced biodiesel or renewable diesel.[100]

In addition to virgin vegetable oils, we also expect increasing volumes of distillers corn oil [101]to be available for use in 2018. The WASDE report does not project distillers corn oil production, so EPA must use an alternative source to project the growth in the production of this feedstock. EPA is using the results of the World Agricultural Economic and Environmental Services (WAEES) model to project the growth in the production of distillers corn oil.[102] In assessing the likely increase in the availability of distillers corn oil from 2017 to 2018, the authors of the WAEES model considered the impacts of an increasing adoption rate of distillers corn oil extraction technologies at domestic ethanol produc-

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[99] For this assessment we have assumed the vegetable oils produced in the 2017/2018 agricultural marketing year are the feedstocks most likely to be used to produce biodiesel and renewable diesel in 2018.

[100] To calculate this volume we have used a conversion of 7.7 pounds of feedstock per gallon of biodiesel. This is based on the expected conversion of soy oil (*http://extension.missouri.edu/p/G1990*), which is the largest source of feedstock used to produce advanced biodiesel and renewable diesel. We believe that it is also a reasonable conversion factor to use for all virgin vegetable oils.

[101] Distillers corn oil is non-food grade corn oil produced by ethanol production facilities

[102] For the purposes of this final rule, EPA relied on WAEES modeling results submitted as comments by the National Biodiesel Board on the 2018 final rule (Kruse, J., "Implications of an Alternative Advanced and Biomass Based Diesel Volume Obligation for Global Agriculture and Biofuels", August 21, 2017, World Agricultural Economic and Environmental Services (WAEES), EPA–HQ–OAR–2017–0091–3880).

tion facilities, as well as increased corn oil extraction rates enabled by advances in this technology. The WAEES model projects that production of distillers corn oil in 2018 will increase by 316 million pounds, from 2,299 million pounds in agricultural marketing year 2016/2017 to 2,615 million pounds in agricultural marketing year 2017/2018. According to the WAEES model, this projected increase in the production of distillers corn oil, if devoted entirely to biofuel production, could be used to produce approximately 39 million gallons of biodiesel or renewable diesel in 2018. We believe that this is a reasonable projection. While the vast majority of the increase in advanced biodiesel and renewable diesel feedstocks produced in the U.S. from 2016 to 2017 is expected to come from virgin vegetable oils and distillers corn oil, increases in the supply of other sources of advanced biodiesel and renewable diesel feedstocks, such as biogenic waste oils, fats, and greases, may also occur. These increases, however, are expected to be modest, as many of these feedstocks that can be recovered economically are already being used for the production of biodiesel or renewable diesel, or in other markets. In total, we expect that increases in feedstocks produced in the U.S. are sufficient to produce approximately 150 million more gallons of advanced biodiesel and renewable diesel in 2018 relative to 2017.[103]

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[103] This projection includes a projected increase in the availability fats and oils other than virgin vegetable oils and distillers corn oil sufficient to produce approximately 15 million gallons of biodiesel. The WAEES model projects an increase in the quantity of "other fats and oils" (including inedible tallow, lard & white grease, yellow grease, brown grease, poultry fat, and other) sufficient to produce 31 million gallons of biodiesel. It is not clear from the WAEES model, however, if the projected increased use of other fats and oils as feedstock for biodiesel production is the

We have also considered the expected increase in the imports of advanced biodiesel and renewable diesel produced in other countries. In previous years, significant volumes of foreign produced advanced biodiesel and renewable diesel have been supplied to markets in the U.S. (see Table IV.B.2–1 above). These significant imports were likely the result of a strong U.S. demand for advanced biodiesel and renewable diesel, supported by the RFS standards, the LCFS in California, the biodiesel blenders tax credit, and the opportunity for imported biodiesel and renewable diesel to realize these incentives. At this time the impact of the expiration of the biodiesel blenders tax credit on the volumes of foreign-produced biodiesel and renewable diesel imported into the U.S., is highly uncertain. Additionally, in August 2017 the Department of Commerce announced a preliminary determination that it would be appropriate to place countervailing duties of 41 percent to 68 percent on biodiesel imported from Argentina and Indonesia. According to data from EIA, biodiesel imports from Argentina were 10,679 thousand barrels in 2016 (approximately 449 million gallons) and 5,601 billion barrels (approximately 235 million gallons) through July 2017 (the most recent month for which data were available at the time of this assessment).

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result of increased production/collection of these feedstocks or diverting them from other uses. We therefore think our slightly more conservative projected increase in these feedstocks sufficient to produce 15 million gallons of biodiesel (without diverting feedstocks from existing uses) is appropriate. We note, however, using the slightly higher projection from the WAEES model (feedstock increase sufficient to produce 31 million gallons of biodiesel) has a very minimal impact on our assessment of the reasonably attainable volume of advanced biodiesel and renewable diesel in 2018, and would have no impact on the required volume of advanced biofuel for 2018.

Biodiesel imports from Indonesia were 2,554 thousand barrels in 2016 (approximately 107 million gallons), with no biodiesel imported in 2017 through July 2017. At this time, it is uncertain whether or not the preliminary determination by the Department of Commerce will be finalized, and it is uncertain what impact the finalization of these duties would have on overall imports of advanced biodiesel and renewable diesel to the U.S. In recent years imports of advanced biodiesel and renewable diesel have increased year-over-year, and absent these actions it may be reasonable to anticipate continued increases in the imported volume of these fuels. In light of this uncertainty, however, we do not believe it would be reasonable at this point to either increase or decrease our projection of the reasonably attainable volume of biodiesel and renewable diesel for 2018 as compared to the levels we projected for 2017.[104]

After a careful consideration of the factors discussed above, EPA has determined, for the purposes of this final rule, that approximately 2.55 billion gallons of advanced biodiesel and renewable diesel is reasonably attainable for use in our determination of the appropriate applicable volume of advanced biofuel to require for 2018. This volume is 150 million gallons higher than the volume of advanced biodiesel and renewable diesel determined to be reasonably attainable and appropriate for the purposes of deriving the advanced biofuel standard in 2017.

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[104] We further note that there have been recent efforts to reinstate the biodiesel tax credit as a producers' tax credit, rather than a blenders tax credit. If the biodiesel tax credit were reinstated as a producers' tax credit it would not apply to foreign biodiesel producers, further limiting the likely supply of imported advanced biodiesel and renewable diesel.

The 150 million gallon increase in advanced biodiesel and renewable diesel that we project will be reasonably attainable for 2018 represents a smaller annual increase in advanced biodiesel and renewable diesel than we assumed in deriving the 2017 advanced biofuel standard (approximately 300 million gallons over 2016 levels). We believe that this reflects that the circumstances presented with respect to 2018 are different from those we anticipated for 2017. The primary differences are a smaller projected increase in advanced feedstock production in the U.S., the continued absence of the biodiesel tax credit, and the preliminary determination placing duties on biodiesel imported from Argentina and Indonesia.

3. Other Advanced Biofuel

In addition to cellulosic biofuel, imported sugarcane ethanol, and advanced biodiesel and renewable diesel, there are other advanced biofuels that can be counted in the determination of reasonably attainable volumes of advanced biofuel for 2018. These other advanced biofuels include biogas, naphtha, heating oil, butanol, jet fuel, and domestically-produced advanced ethanol.[105] However, the supply of these fuels has been relatively low in the last several years.

[105] Advanced biofuel with a D code of 5.

TABLE IV.B.3–1—HISTORICAL SUPPLY OF OTHER ADVANCED BIOFUELS
[Million ethanol-equivalent gallons]

	CNG	Heating oil	Naphtha	Renewable diesel[a]	Domestic ethanol	Total
2013	26	0	3	64	23	116
2014	20	0	18	15	26	79
2015	0	1	24	8	25	58
2016	0	2	26	8	27	63

The downward trend over time in biogas as advanced biofuel with a D code of 5 is due to the re-categorization in 2014 of landfill biogas from advanced (D code 5) to cellulosic (D code 3).[106] Apart from biogas, total supply of advanced biofuel other than imported sugarcane ethanol has been relatively constant during 2014–2016. Based on this historical record, we find that 60 million gallons would be reasonably attainable in 2018.[107] This represents the approximate average of the two most recent years (2015 and 2016) for which complete data are available.

We recognize that the potential exists for additional volumes of advanced biofuel from sources such as jet fuel, liquefied petroleum gas (LPG), and liquefied natural gas (as distinct from compressed natural gas), as well as non-cellulosic biogas such as from digesters. However, since they have been produced in only de minimis and sporadic amounts in the past, we do not have

[a] Some renewable diesel generates D5 rather than D4 RINs as a result of being produced through co-processing with petroleum or being produced from the non-cellulosic portions of separated food waste or annual cover crops.

[106] 79 FR 42128, July 18, 2014.

[107] For the purposes of determining the availability of total renewable fuel, we are using a volume of 40 million gallons of non-ethanol other advanced biofuel and 20 million gallons of advanced domestic ethanol (see discussion in Section V.B.2).

a basis for projecting substantial volumes from these sources in 2018.[108]

4. Total Advanced Biofuel

The total volume of advanced biofuel that we believe is reasonably attainable in 2018 is the combination of cellulosic biofuel and the sources described above: imported sugarcane ethanol, biodiesel and renewable diesel which qualifies as BBD, and other advanced biofuels such as advanced biogas that does not qualify as cellulosic biofuel, heating oil, naphtha, domestic advanced ethanol, and advanced renewable diesel that does not qualify as BBD. Our assessment of the reasonably attainable volumes of these sources, discussed in the preceding sections, is summarized below. We note that the reasonably attainable volumes of each of these advanced biofuels cannot themselves be viewed as volume requirements. The volumes for each advanced biofuel type represent one significant factor that is considered in the analysis used to determine the reasonably attainable volumes of advanced biofuel. As discussed in more detail in a memorandum to the docket, there are many ways that the market could respond to the percentage standards we establish, including use of higher or lower volumes of these fuel types than discussed in this section.[109] In addition, as discussed below, we do not believe it would be appropriate to require use of all volumes we have determined to be reasonably attainable.

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[108] For instance, no RIN-generating volumes of these other advanced biofuels were produced in 2016, and less than 1 mill gal total in prior years.

[109] "Market impacts of biofuels," memorandum from David Korotney to docket EPA–HQ–OAR–2017–0091.

TABLE IV.B.4–1—REASONABLY ATTAINABLE VOLUMES OF ADVANCED BIOFUEL IN 2018
[Million ethanol-equivalent gallons except as noted]

Cellulosic biofuel	288
Advanced biodiesel and renewable diesel (ethanol-equivalent volume/physical volume)	3,953/2,550
Imported sugarcane ethanol	100
Other advanced	60
Total advanced biofuel	4,401

C. Exercise of Cellulosic Waiver Authority for Advanced Biofuel

Based on the information presented above, we believe that 4.40 billion gallons of advanced biofuel would be reasonably attainable in 2018. This volume is 110 million gallons higher than the 4.29 billion gallons that would result from reducing the applicable volume of advanced biofuel by the same amount as the reduction to the statutory applicable volume of cellulosic biofuel (see Section III for a discussion of the cellulosic biofuel volume requirement for 2018). In exercising the cellulosic waiver authority in past years, we determined it was appropriate to require a partial backfilling of missing cellulosic volumes with volumes of non-cellulosic advanced biofuel we determined to be reasonably attainable and appropriate, notwithstanding the increase in costs associated with this decision.[110] However, this year we are balancing the various considerations in a different manner in setting the 2018

[110] See, *e.g.,* Response to Comments Document for the 2014–16 Rule, pages 628–631, available at *https://www.epa.gov/sites/production/files/2015-12/documents/420r15024.pdf.*

standards, placing a greater emphasis on cost considerations.[111]

In Section IV.E we present illustrative cost projections for sugarcane ethanol and soybean biodiesel in 2018, the two advanced biofuels that would be most likely to provide the marginal increase in volumes of advanced biofuel in 2018 in comparison to 2017. Sugarcane ethanol results in a cost increase compared to gasoline that ranges from $0.61–$1.56 per ethanol-equivalent gallon.[112] Soybean biodiesel results in a cost increase compared to diesel fuel that ranges from $0.95–$1.30 per ethanol-equivalent gallon.[113] The cost of these renewable fuels is high as compared to the petroleum fuels they displace. In light of these comparative costs, we believe it is reasonable to forgo the marginal benefit that might be achieved by establishing the advanced biofuel standard to require an additional 110 million

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[111] EPA notes that while the factors considered under the cellulosic waiver authority to reduce volumes could apply to volumes beyond the reduction in cellulosic biofuel, EPA is limited in the exercise of its cellulosic waiver authority to reductions up to the amount of the reduction in cellulosic biofuel. Any further reductions would require a determination under the general waiver authority that the volumes would result in severe economic or environmental harm, or that there is an inadequate domestic supply, as discussed in Section V below.

[112] Sugarcane ethanol results in a projected cost increase of $0.92–$2.34 per gasoline-equivalent gallon. The projected cost of gasoline in 2018 is $1.64 per gallon based on EIA Short-Term Energy Outlook, October 2017, Custom Table Builder, "Refiner Wholesale Gasoline Price."

[113] Soybean biodiesel results in a projected cost increase of $1.62–$2.22 per diesel-equivalent gallon. The projected cost of diesel in 2018 is $1.74 per gallon based on EIA Short-Term Energy Outlook, October 2017, Custom Table Builder, "Diesel Fuel Refiner Wholesale Price."

gallons. See Section IV.E for a further discussion of the projected cost of this final rule.

Based on consideration of the volumes that may be reasonably attainable in 2018, along with a balancing of the costs and benefits associated with the option of setting the advanced biofuel standard at a level that would require use of all volumes that we have estimated could be reasonably attainable, we are exercising our cellulosic waiver authority to reduce advanced biofuel volumes to 4.29 billion gallons for 2018.[114] This advanced biofuel volume requirement for 2018 is similar to the requirement for 2017 when we allowed a portion of the shortfall in cellulosic biofuel to be backfilled with other advanced biofuel.

It should be noted that by exercising the full cellulosic waiver authority for advanced biofuel, the implied statutory volume target for non-cellulosic advanced biofuel of 4.0 billion gallons in 2018 is maintained. Although the implied volume for non-cellulosic advanced biofuel in the statute increases from 3.5 billion gallons in 2017 to 4.0 billion gallons in 2018, the applicable volume requirements for 2017 as finalized by EPA included an allowance for 4.0 billion gallons of non-cellulosic advanced biofuel, one year before envisioned by the statute. Through our 2017 action, we effectively required early use of the 0.5 billion gallon increment of non-cellulosic advanced volume that Congress envisioned would be first used in 2018. The net result of our action for 2018, after deciding that no further reductions beyond those obtained by exercise of the cellulo-

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[114] EPA also considered the availability of advanced carryover RINs in determining whether reduced use of the cellulosic waiver authority would be warranted. For the reasons described in Section II.B, we do not believe this to be the case.

sic waiver authority are appropriate (see Section V), is that the advanced biofuel volume requirement for 2018 is 10 million gallons higher than the advanced biofuel volume requirement for 2017, but the portion of this volume requirement that may be satisfied with non-cellulosic biofuels remains constant.

D. Exercise of Cellulosic Waiver Authority for Total Renewable Fuel

As discussed in Section II.A.1, we believe that the cellulosic waiver provision is best interpreted to provide equal reductions in advanced biofuel and total renewable fuel. We have consistently articulated this interpretation.[115] We believe this interpretation is consistent with the statutory language and best effectuates the objectives of the statute. If EPA were to reduce the total renewable fuel volume requirement by a lesser amount than the advanced biofuel volume requirement, we would effectively increase the opportunity for conventional biofuels to participate in the RFS program beyond the implied statutory cap of 15 billion gallons.[116]

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[115] For instance, see discussion in the final rules setting the 2013, 2014–2016, and 2017 standards: 78 FR 49809–49810, August 15, 2013; 80 FR 77434, December 14, 2015; 81 FR 89752–89753, December 12, 2016. We incorporate by reference the rationale for this interpretation that was articulated in these prior rules.

[116] Since the advanced biofuel volume requirement is nested within the total renewable fuel volume requirement, the statutory implied volume for conventional renewable fuel in the statutory tables can be discerned by subtracting the applicable volume of advanced biofuel from that of total renewable fuel. Performing this calculation with respect to the tables in CAA section 211(o)(2)(B) indicates a Congressional expectation that in the time period 2015–2022, advanced biofuel volumes would grow from

Applying an equal reduction of 6.71 billion gallons to both the statutory target for advanced biofuel and the statutory target for total renewable fuel results in a total renewable fuel volume of 19.29 billion gallons as shown in Table IV.A–1.[117] If we were to determine that there is a basis to exercise the general waiver authority or the biomass-based diesel waiver authority, we could provide further reductions to the total renewable fuel volume. However, as described in more detail below in Section V, we believe that there is not sufficient justification for such further reductions in 2018.

E. Impacts of 2018 Standards on Costs

In this section, EPA presents its assessment of the illustrative costs of the final 2018 RFS rule. It is important to note that these illustrative costs do not attempt to capture the full impacts of this final rule. These estimates are provided solely for the purpose of showing how the cost to produce a gallon of a "representative" renewable fuel compares to the cost of petroleum fuel. There are a significant number of caveats that must be considered when interpreting these cost estimates. There are a number of different feedstocks that could be used to produce biofuels, and there is a significant amount of heterogeneity in the costs associated with these different feedstocks and fuels. Some renewable fuels may be cost competitive with the petroleum fuel they replace; however, we do not have cost data on every type of feedstock and every type of fuel.

5.5 to 21 billion gallons, while the implied volume for conventional renewable fuel would remain constant at 15 billion gallons.

[117] EPA also considered the availability of carryover RINs in determining whether reduced use of the cellulosic waiver authority would be warranted. For the reasons described in Section II.B, we do not believe this to be the case.

Therefore, we do not attempt to capture this range of potential costs in our illustrative estimates.

The annual standard-setting process encourages consideration of the RFS program on a piecemeal (*i.e.,* year-to-year) basis, which may not reflect the full, long-term costs and benefits of the program. For the purposes of this final rule, other than the estimates of costs of producing a "representative" renewable fuel compared to cost of petroleum fuel, EPA did not quantitatively assess other direct and indirect costs or benefits of changes in renewable fuel volumes. These direct and indirect costs and benefits include infrastructure costs, investment, GHG emissions and air quality impacts, or energy security benefits, which all are to some degree affected by the annual standards. While some of these impacts were analyzed in the 2010 final rulemaking that established the current RFS program,[118] we have not analyzed these impacts for the 2018 volume requirements. We framed the analyses we have performed for this final rule as "illustrative" so as not to give the impression of comprehensive estimates.

1. Illustrative Cost Savings Associated With Reducing Statutory Cellulosic Volumes

To provide an illustrative estimate of the cost of the 2018 cellulosic biofuel requirements, EPA has compared the 2018 cellulosic biofuel volume requirements to the statutory volume that would be required absent the exercise of our cellulosic waiver authority under

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[118] RFS2 Regulatory Impact Analysis (RIA). U.S. EPA 2010, Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis. EPA–420–R–10–006. February 2010. Docket EPA–HQ–OAR–2009–0472–11332.

CAA section 211(o)(7)(D)(i).[119] As described in other sections of this final rule, we believe that the additional 6.71 billion gallons of cellulosic biofuel envisioned by the statute will not be produced in 2018. Therefore, estimating costs of this volume reduction is inherently challenging. However, we have taken the relatively straightforward methodology of multiplying the per-gallon costs associated with the volumes that would be required under this final rule by the amount of cellulosic renewable fuel that is being waived. This comparison results in a cost savings estimated to be $5.3–$15.9 billion.

To estimate the overall cost savings from waiving the cellulosic biofuel volumes, EPA has taken the following steps. First, EPA determined the magnitude of the volume reduction of cellulosic biofuel we are establishing in this rule, relative to the statutory volume. In this rule we are reducing the required volume of cellulosic biofuel by 6.71 billion gallons, with corresponding reductions in the advanced biofuel and total renewable fuel standards. Second, we estimated the per-gallon costs of producing cellulosic ethanol derived from corn kernel fiber that would be expected in complying with the standards. Third, the per-gallon costs of cellulosic biofuel from corn fiber were multiplied by 6.71 billion gallons.

While there may be growth in other cellulosic biofuel sources, for this exercise we believe it is appropriate to use corn kernel fiber as the representative cellulosic biofuel. The majority of liquid cellulosic biofuel in 2018

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[119] EPA is also using its discretion to reduce the advanced biofuel and total renewable fuel requirements using the cellulosic waiver authority. This discretionary action is based partially on the costs of advanced biofuels and provides additional cost savings.

is expected to be produced using this technology, and application of this technology in the future could result in significant incremental volumes of cellulosic biofuel. In addition, as explained in Section III.D.2, we believe that production of the major alternative cellulosic biofuel—CNG/LNG derived from biogas—is limited to approximately 580 million gallons due to a limitation in the number of vehicles capable of using this form of fuel.[120]

EPA uses a "bottom-up" engineering cost analysis to quantify the costs of producing a gallon of cellulosic ethanol derived from corn kernel fiber. There are multiple processes that could yield cellulosic ethanol from corn kernel fiber. EPA assumes a cellulosic ethanol production process that generates biofuel using distiller's grains, a co-product of generating corn starch ethanol that is commonly dried and sold into the feed market as distillers dried grains with solubles (DDGS), as the renewable biomass feedstock. We assume an enzymatic hydrolysis process with cellulosic enzymes to break down the cellulosic components of the distiller's grains. This process for generating cellulosic ethanol is similar to approaches currently used by industry to generate cellulosic ethanol at a commercial scale, and we believe these costs estimates are likely representative of the range of different technology options being developed to produce ethanol from corn kernel

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[120] To calculate this estimate, EPA used the Natural Gas Vehicle Use from the STEO Custom Table Builder (0.12 billion cubic feet/day in 2018). This projection includes all CNG/LNG used as transportation fuel from both renewable and non-renewable sources. EIA does not project the amount of CNG/LNG from biogas used as transportation fuel. To convert billion cubic feet/day to ethanol-equivalent gallons, EPA used conversion factors of 1020 BTU per cubic foot of natural gas and 77,000 BTU of natural gas per ethanol-equivalent gallon.

fiber. We then compare the per-gallon wholesale costs of the cellulosic ethanol to the petroleum fuels that would be replaced.

These cost estimates do not consider taxes, retail margins, or other costs or transfers that occur at or after the point of blending (transfers are payments within society and are not additional costs). We do not attempt to estimate potential cost savings related to avoided infrastructure costs (*e.g.,* the cost savings of not having to provide pumps and storage tanks associated with higher-level ethanol blends). When estimating per-gallon costs, we consider the costs of gasoline on an energy equivalent basis as compared to ethanol, since more ethanol gallons must be consumed to go the same distance as gasoline due to the ethanol's lower energy content.

Table IV.E.1–1 below presents the cost savings associated with this final rule that are estimated using this approach.[121] The statutory cellulosic biofuel target in EISA for 2018 is seven billion gallons (ethanol equivalent). The cellulosic biofuel volume used in this rule to establish the 2018 cellulosic biofuel percentage standard is 288 million gallons. The amount of cellulosic biofuel being waived is 6.71 billion gallons. The per-gallon cost difference estimates for cellulosic ethanol ranges from $0.79–$2.37 per ethanol equivalent gallon.[122] Given that cellulosic ethanol production is just

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[121] Details of the data and assumptions used can be found in a Memorandum available in the docket entitled "Cost Impacts of the Final 2018 Annual Renewable Fuel Standards", Memorandum from Michael Shelby, Dallas Burkholder, and Aaron Sobel to EPA Docket EPA–HQ–OAR–2017–0091.

[122] For the purposes of the cost estimates in this section, EPA has not attempted to adjust the price of the petroleum fuels to account for the impact of the RFS program, since the changes in

starting to become commercially available, the cost estimates have a significant range. Multiplying those per-gallon cost differences by the amount of cellulosic biofuel waived in this final rule, 6.71 billion gallons, results in approximately $5.3–$15.9 billion in cost savings.

TABLE IV.E–1—IMPACTS OF THE DIFFERENCE BETWEEN EISA VOLUMES FOR THE CELLULOSIC BIOFUEL STANDARD AND FINAL CELLULOSIC VOLUME IN 2018

	2018 EISA cellulosic volume standard	2018 Final cellulosic volume
Cellulosic Volume Required (Million Ethanol-Equivalent Gallons) [123]	7,000	288
Change in Required Cellulosic Biofuels (Million Gallons as Ethanol)		(6,712)
Cost Difference Between Cellulosic Corn Fiber-Derived Ethanol and Gasoline Per Gallon ($/EGE) [124]		$0.79–$2.37
Estimated Cost Difference in Meeting Cellulosic Biofuel Volume (Billion $) [125]		$(5.3)–$(15.9)

2. Illustrative Cost Analysis of Advanced Biofuels Using 2017 as the Baseline

We recognize that for the purpose of estimating the cost of the 2018 RFS volume requirements that a number of different scenarios using different "baselines" would be of interest to stakeholders. Therefore, in this section, we are also providing an illustrative cost analysis that shows the costs of the advanced biofuel stand-

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the renewable fuel volume are relatively modest. Rather, we have simply used the wholesale price projections for gasoline and diesel as reported in EIA's October 2017 STEO.

[123] Overall fuel volumes may not match due to rounding.

[124] Approximate costs are rounded to the cents place.

[125] Approximate costs are rounded to the first decimal place.

ard as compared to those associated with the preceding year's standard, which as discussed in section IV.C. will lead to an increase of 10 million gallons of advanced biofuel in 2018 in comparison to 2017.[126]

EPA is providing an illustrative cost analysis for the increase in the overall advanced biofuel volume of 10 million ethanol equivalent gallons (as compared to 2017 volumes) using four different scenarios, assuming this increase in advanced biofuel volumes is comprised of: (1) cellulosic biofuel from CNG/LNG, (2) cellulosic biofuel from corn kernel fiber, (3) soybean oil BBD, or (4) sugarcane ethanol from Brazil. Showing the illustrative costs of soybean oil BBD and sugarcane ethanol is consistent with the methodology EPA developed for previous rulemakings. However, this discussion should not be interpreted as suggesting that the various renewable fuel types discussed are necessarily available in the marketplace. The availability of different types of renewable fuel is discussed in other sections of this preamble; in this section we assess costs as if the different fuel types are available, without intending to suggest that they are.

In previous annual RFS rules, EPA provided an illustrative cost estimate for the entire change in the total renewable fuel volume standard assuming it was satisfied with conventional (*i.e.,* non-advanced) corn ethanol. As there is no change in the 2018 implied conventional volume relative to the 2017 volume, all of the changes in both the advanced and total renewable fuel volumes are properly attributed to advanced biofuel.

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[126] There is also an increase of 10 million gallons in the 2018 applicable volume of total renewable fuel as compared to the 2017 volume. However, in light of the nested standards, that increase is entirely attributable to the increase in the advanced volume.

As described earlier, we are focusing on the wholesale level in our cost scenarios, and do not consider taxes, retail margins, additional infrastructure, or other costs or transfers that occur at or after the point of blending. More background information on this section, including details of the data sources used and assumptions made for each of the scenarios, can be found in a memorandum available in the docket.[127]

Table IV.E.2–1 below presents estimates of per energy-equivalent gallon costs for producing soybean biodiesel, Brazilian sugarcane ethanol, CNG/LNG derived from landfill biogas, and cellulosic ethanol derived from corn fiber relative to the petroleum fuels they replace at the wholesale level. For each of the four scenarios, these per-gallon costs are then multiplied by the 10 million ethanol-equivalent gallon increase in the 2018 advanced standard relative to the previous 2017 standard to obtain an overall cost estimate.

[127] "Cost Impacts of the Final 2018 Annual Renewable Fuel Standards", Memorandum from Michael Shelby, Dallas Burkholder, and Aaron Sobel to EPA Docket EPA–HQ–OAR–2017–0091.

TABLE IV.E.2–1—ILLUSTRATIVE COSTS OF THE 10 MILLION GALLON INCREASE IN THE ADVANCED BIOFUEL VOLUME REQUIREMENT IN 2018 RELATIVE TO THE 2017 VOLUME REQUIREMENT

Soybean Biodiesel Scenario	
Cost Difference Between Soybean Biodiesel and Petroleum Diesel Per Gallon ($/EGE)[128]	$0.89–$1.22
Annual Change in Overall Costs (Million $)[129]	$9–$12
Brazilian Sugarcane Ethanol Scenario	
Cost Difference Between Sugarcane Ethanol and Gasoline Per Gallon ($/EGE)	$0.61–$1.56
Annual Change in Overall Costs (Million $)	$6–$16
CNG/LNG Derived from Landfill Biogas Scenario	
Cost Difference Between CNG/LNG Derived from Biogas and Natural Gas ($/EGE)[130]	$(0.04)–$0.07
Annual Change in Overall Costs (Million $)	$(0.4)–$0.7
Corn Fiber-Derived Ethanol Scenario	
Cost Difference Between Cellulosic Corn Fiber-Derived Ethanol and Gasoline Per Gallon ($/EGE)	$0.79–$2.37
Annual Change in Overall Costs (Million $)	$8–$24

Based on this illustrative analysis of four separate hypothetical scenarios, EPA estimates that the costs for changes in the advanced fuel volumes compared to 2017 could range from $(0.4)–$24 million in 2018. It is important to note that these illustrative costs do not take into consideration the benefits of the program.[131] For the purpose of this annual rulemaking, we have not quantified benefits for the 2018 standards. For

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[128] Per-gallon cost differences compare illustrative biofuels to their petroleum fuel counterparts on an ethanol gallon equivalent (EGE) basis, accounting for the differences in energy content between fuels, and then multiplied by the total RINs needed to meet the change in volume obligations.

[129] Overall costs may not match per-gallon costs times volumes due to rounding.

[130] CNG/LNG derived from biogas and natural gas costs are compared on an ethanol gallon equivalent (EGE) energy content basis.

[131] The small negative cost estimate is likely a result of the methodology undertaken for these illustrative costs.

example, we do not have a quantified estimate of the GHG or energy security benefits for a single year (*e.g.,* 2018). Also, there are impacts that are difficult to quantify, such as rural economic development and employment changes from more diversified fuel sources, that are not quantified in this rulemaking.

V. Consideration of Additional Reductions Using Other Waiver Authorities

As discussed in previous sections, we are reducing the statutory volume target for cellulosic biofuel to reflect the projected production volume of that fuel type in 2018, and we are reducing both advanced biofuel and total renewable fuel by the maximum permissible amount authorized under the cellulosic waiver authority in CAA section 211(o)(7)(D)(i).

We have also considered whether it would be appropriate to provide further reductions for these renewable fuel categories pursuant to the general waiver authority in CAA section 211(o)(7)(A), or for these renewable fuel categories and the 2018 BBD using the BBD waiver authority in CAA section 211(o)(7)(E). We have concluded that further reductions in volumes using any of these other waiver authorities are not warranted. We note that in the October 4 **Federal Register** document we solicited comment on possible new interpretations of the general waiver authority for inadequate domestic supply and severe economic harm and of the biomass-based diesel waiver authority.[132] We find it unnecessary to resolve whether to adopt such interpretations at this point in time because under any approach we would find exercise of these waiver authorities not appropriate based on the record before us.

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[132] 82 FR 46174, October 4, 2017.

As a result, we are finalizing advanced biofuel and total renewable fuel volume requirements resulting from the exercise of the cellulosic biofuel waiver authority alone, and we are not modifying the 2018 BBD applicable volume of 2.1 billion gallons established through a prior rulemaking. The implied volume for conventional renewable fuel (calculated by subtracting the advanced volume from the total volume) will be 15.0 billion gallons, consistent with the statutory target provided in the statute for 2018.

A. Inadequate Domestic Supply

On July 21, 2017, we proposed to reduce the 2018 statutory volume targets for advanced biofuel and total renewable fuel by the maximum permissible amount using the cellulosic waiver authority, and not to reduce these volumes further using other authorities. However, we requested comment on the possible additional use of the general waiver authority or other authorities to provide further reductions in the proposed volume requirements.[133] To evaluate the possibility for using the general waiver authority on the basis of a finding of inadequate domestic supply, we considered the projected volumes of renewable fuel that can be supplied to refiners, importers, and blenders in 2018 from both domestic production and imports. In addition, consistent with the approach identified for consideration in the October 4 document, we considered the projected volumes of renewable fuel that can be supplied to refiners and blenders solely from domestic production. Under either approach we conclude a waiver is not warranted.

In Section III we discussed our projection that 288 million gallons of cellulosic biofuel will be made

[133] 82 FR 34206 at 34213, October 4, 2017.

available in 2018. In Section IV we described our assessment that about 4.40 billion gallons of advanced biofuel would be reasonably attainable in 2018 from both domestic production and imports but that, after considering a number of factors, such as the potential for feedstock/fuel diversions and cost of advanced biofuel, we would exercise our discretion to use the full cellulosic waiver authority to reduce the applicable volume to 4.29 billion gallons.[134] As a result, we do not anticipate an inadequate domestic supply of advanced biofuels to meet a volume requirement of 4.29 billion gallons for advanced biofuel, when both domestic production and imports are considered.

Having determined that there will not be an inadequate domestic supply of advanced biofuel, we further considered whether there may be an inadequate domestic supply to satisfy the portion of the total renewable fuel volume requirement that can be satisfied with non-advanced (conventional) renewable fuel. After application of the full cellulosic waiver authority to the advanced biofuel and total renewable fuel statutory volume targets, the implied statutory volume for conventional renewable fuel is 15.0 billion gallons. The total domestic production capacity of corn ethanol in the U.S. is about 16 billion gallons, and total production of denatured and undenatured ethanol from these facilities in 2016 exceeded 15 billion gallons.[135] As a

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[134] Because EPA's authority under the cellulosic waiver authority affords EPA more discretion to reduce volumes of advanced and total renewable fuel than the general waiver authority under an evaluation of inadequate domestic supply, EPA has evaluated the supply of advanced biofuel for purposes of a determination on the adequacy of supply without consideration of these factors.

[135] "2017 Ethanol Industry Outlook" by the Renewable Fuels Association indicates that 2017 nationwide production capacity is

result, there does not appear to be an inadequate domestic supply of renewable fuel to satisfy the implied 15 billion gallon conventional renewable fuel volume that results from full application of the cellulosic waiver authority to reduce statutory volume targets for advanced biofuel and total renewable fuel. We note that this assessment does not include imported volumes of fuel, such as conventional biodiesel, which could also be used to satisfy the volume requirements. In light of this finding, we conclude that there is not an inadequate domestic supply of volumes than can be used to meet the 15 billion gallon implied volume for conventional renewable fuel, and thus that further reductions of the 19.29 billion gallon total renewable fuel volume requirement derived through use of the cellulosic waiver authority would not appropriate when taking into account both domestic production and imports.

In the October 4 document, we discussed comments on the proposal suggesting that EPA should interpret the undefined term "domestic" in the phrase "inadequate domestic supply" to account for only volumes of renewable fuel that are produced domestically. If EPA were to adopt this interpretation, we could exclude potential imports of renewable fuel in our assessment of domestic supply but, even if we found domestic supply to be inadequate, could take factors such as potential imports and the availability of carryover RINs into account in determining the extent to which

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16.0 bill gal and actual production in 2016 was 15.25 bill gal. "US Fuel Ethanol Plant Production Capacity from EIA," estimates 2017 nameplate production capacity at 15.51 bill gal. In "Ethanol Production in 2016 from EIA," EIA indicates that 2016 actual production was 15.45 bill gal. All documents are available in docket EPA–HQ–OAR–2017–0091.

we should exercise our discretion to grant a waiver on the basis of inadequate domestic supply.[136] As described in more detail in the RTC document, stakeholders who addressed this issue provided varying perspectives on the extent to which such an interpretation would have a relevant impact on renewable fuel supply.

In light of the fact that the domestic production capacity of conventional biofuel volumes is in excess of 15 billion gallons, whether we were to exclude imported biofuels from our consideration of domestic supply would primarily impact our assessment of the supply of cellulosic biofuel and advanced biofuel volumes, not conventional renewable fuel. With respect to cellulosic biofuel, we note that the vast majority of the supply in 2018 is expected to come from domestic sources. In fact, if EPA excluded consideration of projected cellulosic biofuel imports, our projection of the available volume of cellulosic biofuel in 2018 would be reduced by only 2 million gallons or less than 1 percent of our projection that 288 million cellulosic biofuel gallons will be made available in 2018. Given the importance that Congress placed on the growth of cellulosic biofuel volumes, our projection that compliance with a 288 million gallon requirement is feasible using RINs generated in 2018, and the availability of carryover cellulosic biofuel RINs and cellulosic waiver credits for additional compliance flexibility, EPA would not exercise its discretion to lower the 288 million gallon projected cellulosic biofuel volume by 2 million gallons even if

[136] EPA's current regulations provide that qualifying imported biofuel may be used for compliance with the RFS standards; EPA's response to comments on this approach to imported biofuels is provided in the RTC document.

EPA were to interpret the term "domestic supply" to exclude imported volumes.

With respect to the available supply of advanced biofuel in 2018 in the context of an interpretation of inadequate domestic supply that excludes imports, several commenters noted the data provided by EPA in the October 4 document indicating that a significant portion of the advanced biofuel available in previous years has been from imported biofuels, particularly imported biodiesel and renewable diesel. Some commenters pointed to total domestic production capacity and feedstock availability to argue that domestic producers are capable of compensating for volumes that would not be provided through imports, so that even under an interpretation of "domestic supply" that excluded imports, EPA would not be justified in reducing volumes on the basis of inadequate domestic supply to a level below what was proposed. Others suggested that, without imported volumes, the domestic industry could not ramp up production quickly enough to compensate for the exclusion of imports from our analysis and provide a "domestic supply" equal to the proposed 2018 volume requirements.[137] We believe, based on the record before us, that there is uncertainty regarding the capability of the domestic advanced

[137] The "domestic supply" of BBD for 2018 would likely be adequate to meet the 2018 standard of 2.1 billion gallons. Domestic production of BBD would need to increase by approximately 300 million gallons as compared to the 2016 production. As discussed above, EPA believes this increase is possible and received comments suggesting this volume increase could be met by domestic production. Additionally, carryover RINs and imported volumes could still be used to meet the standard. Therefore, EPA would not chose to exercise its authority to grant a waiver on the basis of inadequate domestic supply for BBD for 2018 even if it interpreted the term "domestic supply" to exclude imports.

biofuel industry to compensate in 2018 for volumes that would not be provided through imports. Taking this uncertainty into account (including the distinct possibility that the domestic industry could compensate for exclusion of imports), as well as the availability of imported volumes and carryover RINs, EPA would not choose to exercise its authority to grant a waiver on the basis of inadequate domestic supply for 2018 even if it interpreted the term "domestic supply" to exclude imports. In light of this determination, we need not resolve at this time the interpretive issue regarding whether the term "domestic supply" should include consideration of imports.

B. Severe Economic Harm

The proposal and October 4 document requested comment on the possibility of further reductions in the proposed volume requirements, including on the basis of a severe economic harm. We received comments from stakeholders both in support of, and opposed to, further reductions in the advanced biofuel and/or total renewable fuel volume requirements based on a finding of severe economic harm. For instance, several obligated parties stated that the purchase of RINs to comply with the applicable standards represents a significant economic burden to their companies. Some also indicated that they are considering filing for bankruptcy. However, these commenters did not provide sufficient evidence that the purchase of RINs, as opposed to other market factors, is responsible for the company's difficult economic circumstances, or why they cannot recoup the cost of RINs through higher prices of their products, or the arguments presented were unconvinc-

ing.[138] None of the commenters provided compelling evidence that the proposed RFS volume requirements for 2018 would be likely to cause severe economic harm to a region, State, or the U.S.[139] Further discussion of these comments can be found in the RTC document.

In addition to reviewing comments on the proposed rule and the October 4 document, EPA also reviewed market data from 2017 and previous years to see if there was evidence that the RFS standards are currently causing severe economic harm, or would be likely to cause severe economic harm in 2018. Given that the 2018 volumes generated through the maximum reduction permitted under the cellulosic waiver authority are nearly the same as the volume requirements for 2017, we considered:

1. Whether severe economic harm has occurred to date or is likely to occur in 2017, and

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[138] We further note that before exercising the general waiver authority on the basis of severe economic harm to a State, a Region or the U.S., EPA would need to consider whether a waiver that would affect the standards applicable to all obligated parties, and would take into account any negative economic impacts to farmers and biofuel producers from a waiver, would be of significant benefit to individual obligated parties facing financial difficulties.

[139] In the October 4 document, we solicited comment on EPA's prior interpretation of the term "severe economic harm." As discussed in the RTC document accompanying this action, we believe that the evidence in the record would be insufficient to support a finding of severe economic harm under any reasonable interpretation of the phrase advanced by commenters, so do not find it necessary to assess changes to our interpretation of the phrase at this time.

2. whether the economic conditions in 2018 might be expected to be substantially different than those in 2017.

To determine whether severe economic harm has occurred to date or is likely to occur in in 2017, we investigated several possible indicators. These included RIN generation for 2017 relative to 2016, refinery closures, retail fuel prices, and corn and soybean prices. Based on our investigation, we do not believe that severe economic harm has occurred thus far in 2017 to any State, region, or the U.S. as a result of the 2017 standards, or is likely occur by the end of 2017. Details of this investigation can be found in a memorandum to the docket.[140]

To determine whether the economic conditions in 2018 might be expected to be substantially different than those in 2017 in ways that could affect the economic impact of compliance with the RFS program, we investigated projections of two primary drivers of the cost of compliance: Crop-based feedstock futures prices, and projected gasoline demand. We also investigated the potential market impacts of the final 2018 standards, most specifically in terms of ethanol and biodiesel consumption.[141]

Based on the record before us, we do not believe that there is sufficient evidence to conclude that severe economic harm is occurring currently in 2017 in any State, region, or the United States, and we do not believe that market conditions in 2018 are likely to

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[140] "Assessment of waivers for severe economic harm or BBD prices for 2018," memorandum from David Korotney to docket EPA–HQ–OAR–2017–0091.

[141] "Market impacts of biofuels," memorandum from David Korotney to docket EPA–HQ–OAR–2017–0091.

cause compliance with the applicable standards to be more economically challenging than it is in 2017. Given that the 2018 standards are very similar to the 2017 standards, then, we do not believe that further reductions in the 2018 volume requirements on the basis of severe economic harm are warranted.

C. Severe Environmental Harm

EPA received comments in response to the proposal asserting that there are negative environmental impacts that may be associated with the RFS program. A significant portion of these concerns center on feedstock production. Although we are authorized to reduce the statutory volume targets on the basis of a finding that the requirements would "severely harm the . . . environment of a State, region, or the United States," commenters have not presented evidence sufficient to support a determination to make a reduction on this basis for 2018. EPA is not making reductions on this basis for 2018. EPA's response to comments related to perceived environmental harms of the RFS program is set forth in the RTC document accompanying this rule.

D. Biomass-Based Diesel Waiver Authority

The BBD waiver authority in CAA section 211(o)(7)(E)(ii) provides that if EPA determines that there is a significant renewable feedstock disruption or other market circumstance that would make the price of BBD increase significantly, then EPA shall, in consultation with the Secretary of Energy and the Secretary of Agriculture, issue an order to reduce, for up to a 60-day period, the annual volume requirement for BBD by an appropriate quantity that does not exceed 15 percent. If EPA reduces the annual volume requirement for BBD using this waiver authority, we may also reduce the applicable volume of advanced

biofuel and total renewable fuel by an equal or lesser volume than the reduction in BBD. In the October 4 document we requested comment on the expected impact on the price of BBD of the expiration of the biodiesel blenders tax credit, proposed import duties on biodiesel from Argentina and Indonesia, or any other factors. We further requested comment on whether any expected impacts should be considered significant for the purposes of the BBD waiver authority.

To investigate whether a reduction in the 2018 BBD volume requirement would be warranted under CAA section 211(o)(7)(E)(ii), we considered current and historical prices of unblended biodiesel (B100), the price of blended biodiesel (in particular, B20), and BBD (D4) RIN prices. The results of this investigation are described in a memorandum to the docket.[142] EPA discussed in the October 4 document the fact that the Department of Commerce had imposed preliminary tariffs on biodiesel imported from Argentina and Indonesia, and that such tariffs could impact the price of BBD. However, these tariffs have not yet been finalized, nor has EPA observed any significant impact of the announcement of the preliminary tariffs on the price of biomass-based diesel.[143]

Based on the information before us, including the results of our investigation and information and comments submitted in response to the October 4 document, we have concluded that there is not sufficient

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[142] "Assessment of waivers for severe economic harm or BBD prices for 2018," memorandum from David Korotney to docket EPA-HQ-OAR-2017-0091.

[143] "Assessment of waivers for severe economic harm or BBD prices for 2018," memorandum from David Korotney to docket EPA-HQ-OAR-2017-0091.

evidence of a significant increase to the price of BBD due to feedstock disruption or other relevant market circumstances to justify reductions to the 2018 BBD volume requirement using the biomass-based diesel waiver authority.

[Content Omitted]

VII. Percentage Standards for 2018

The renewable fuel standards are expressed as volume percentages and are used by each obligated party to determine their Renewable Volume Obligations (RVOs). Since there are four separate standards under the RFS program, there are likewise four separate RVOs applicable to each obligated party. Each standard applies to the sum of all non-renewable gasoline and diesel produced or imported. The percentage standards are set so that if every obligated party meets the percentages by acquiring and retiring an appropriate number of RINs, then the amount of renewable fuel, cellulosic biofuel, BBD, and advanced biofuel used will meet the applicable volume requirements on a nationwide basis.

Sections III through V provide our rationale and basis for the volume requirements for 2018.[156] The volumes used to determine the percentage standards are shown in Table VII–1.

[156] The 2018 volume requirement for BBD was established in the 2017 final rule.

TABLE VII–1—VOLUMES FOR USE IN SETTING THE 2018 APPLICABLE PERCENTAGE STANDARDS
[Billion gallons]

Cellulosic biofuel	0.288
Biomass-based diesel [a]	2.10
Advanced biofuel	4.29
Renewable fuel	19.29

[a] Represents physical volume.

For the purposes of converting these volumes into percentage standards, we generally use two decimal places to be consistent with the volume targets as given in the statute, and similarly two decimal places in the percentage standards. However, for cellulosic biofuel we use three decimal places in both the volume requirement and percentage standards to more precisely capture the smaller volume projections and the unique methodology that in some cases results in estimates of only a few million gallons for a single producer.

A. Calculation of Percentage Standards

To calculate the percentage standards we are following the same methodology for 2018 as we have in all prior years. The formulas used to calculate the percentage standards applicable to producers and importers of gasoline and diesel are provided in 40 CFR 80.1405. The formulas rely on estimates of the volumes of gasoline and diesel fuel, for both highway and nonroad uses, which are projected to be used in the year in which the standards will apply. The projected gasoline and diesel volumes are provided by EIA, and include projections of ethanol and biodiesel used in transportation fuel. Since the percentage standards apply only to the non-renewable gasoline and diesel produced or imported, the volumes of ethanol and biodiesel are

subtracted out of the EIA projections of gasoline and diesel.

Transportation fuels other than gasoline or diesel, such as natural gas, propane, and electricity from fossil fuels, are not currently subject to the standards, and volumes of such fuels are not used in calculating the annual percentage standards. Since under the regulations the standards apply only to producers and importers of gasoline and diesel, these are the transportation fuels used to set the percentage standards, as well as to determine the annual volume obligations of an individual gasoline or diesel producer or importer.

As specified in the RFS2 final rule,[157] the percentage standards are based on energy-equivalent gallons of renewable fuel, with the cellulosic biofuel, advanced biofuel, and total renewable fuel standards based on ethanol equivalence and the BBD standard based on biodiesel equivalence. However, all RIN generation is based on ethanol-equivalence. For example, the RFS regulations provide that production or import of a gallon of qualifying biodiesel will lead to the generation of 1.5 RINs. The formula specified in the regulations for calculation of the BBD percentage standard is based on biodiesel-equivalence, and thus assumes that all BBD used to satisfy the BBD standard is biodiesel and requires that the applicable volume requirement be multiplied by 1.5. However, BBD often contains some renewable diesel, and a gallon of renewable diesel typically generates 1.7 RINs.[158] In addition, there is often some renewable diesel in the conventional renewable fuel pool. As a result, the actual number of

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[157] See 75 FR 14670 (March 26, 2010).

[158] Although in some cases a gallon of renewable diesel generates either 1.5 or 1.6 RINs.

RINs generated by biodiesel and renewable diesel is used in the context of our assessing reasonably attainable volumes for purposes of deriving the applicable volume requirements and associated percentage standards for advanced biofuel and total renewable fuel, and likewise in obligated parties' determination of compliance with any of the applicable standards. While there is a difference in the treatment of biodiesel and renewable diesel in the context of determining the percentage standard for BBD versus determining the percentage standard for advanced biofuel and total renewable fuel, it is not a significant one given our approach to determining the BBD volume requirement. Our intent in setting the BBD applicable volume is to provide a level of guaranteed volume for BBD, but as described in Section VI.B, we do not expect the BBD standard to be binding. That is, we expect that actual supply of BBD, as well as supply of conventional biodiesel and renewable diesel, will be driven by the advanced biofuel and total renewable fuel standards.

B. Small Refineries and Small Refiners

In CAA section 211(o)(9), enacted as part of the Energy Policy Act of 2005, and amended by the Energy Independence and Security Act of 2007, Congress provided a temporary exemption to small refineries[159] through December 31, 2010. Congress provided that small refineries could receive a temporary extension of the exemption beyond 2010 based either on the results of a required DOE study, or based on an EPA determination of "disproportionate economic hardship" on a case-by-case basis in response to small refinery petitions. In reviewing petitions, EPA, in consultation

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[159] A small refiner that meets the requirements of 40 CFR 80.1442 may also be eligible for an exemption.

with the Department of Energy, evaluates whether the small refinery has demonstrated either disproportionate impacts or viability impairment, and may grant refineries exemptions upon demonstration of either criterion.

EPA has granted exemptions pursuant to this process in the past. However, at this time no exemptions have been approved for 2018, and therefore we have calculated the percentage standards for 2018 without any adjustment for exempted volumes. EPA is maintaining its approach that any exemptions for 2018 that are granted after the final rule is released will not be reflected in the percentage standards that apply to all gasoline and diesel produced or imported in 2018.[160]

C. Final Standards

The formulas in 40 CFR 80.1405 for the calculation of the percentage standards require the specification of a total of 14 variables covering factors such as the renewable fuel volume requirements, projected gasoline and diesel demand for all states and territories where the RFS program applies, renewable fuels projected by EIA to be included in the gasoline and diesel demand, and exemptions for small refineries. The values of all the variables used for this final rule are shown in Table VII.C–1.[161]

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[160] Further discussion of this issue can be found in the Response to Comments document in the docket for this action.

[161] To determine the 49-state values for gasoline and diesel, the amounts of these fuels used in Alaska is subtracted from the totals provided by DOE because petroleum based fuels used in Alaska do not incur RFS obligations. The Alaska fractions are determined from the June 29, 2016 EIA State Energy Data System (SEDS), Energy Consumption Estimates.

TABLE VII.C–1—VALUES FOR TERMS IN CALCULATION OF THE 2018 STANDARDS[162]
[Billion gallons]

Term	Description	Value
RFV_{CB}	Required volume of cellulosic biofuel	0.288
RFV_{BBD}	Required volume of biomass-based diesel	2.10
RFV_{AB}	Required volume of advanced biofuel	4.29
RFV_{RF}	Required volume of renewable fuel	19.29
G	Projected volume of gasoline	143.22
D	Projected volume of diesel	54.76
RG	Projected volume of renewables in gasoline	14.71
RD	Projected volume of renewables in diesel	2.53
GS	Projected volume of gasoline for opt-in areas	0
RGS	Projected volume of renewables in gasoline for opt-in areas	0
DS	Projected volume of diesel for opt-in areas	0
RDS	Projected volume of renewables in diesel for opt-in areas	0
GE	Projected volume of gasoline for exempt small refineries	0.00
DE	Projected volume of diesel for exempt small refineries	0.00

Projected volumes of gasoline and diesel, and the renewable fuels contained within them, were provided by EIA on October 11, 2017, as required in the statute at CAA section 211(o)(3)(A).

Using the volumes shown in Table VII.C–1, we have calculated the percentage standards for 2018 as shown in Table VII.C–2.

TABLE VII.C–2—FINAL PERCENTAGE STANDARDS FOR 2018

Cellulosic biofuel	0.159
Biomass-based diesel	1.74
Advanced biofuel	2.37
Renewable fuel	10.67

[162] See "Calculation of final % standards for 2018" in docket EPA–HQ–OAR–2017–0091.

VIII. Administrative Actions

A. Assessment of the Domestic Aggregate Compliance Approach

The RFS regulations specify an "aggregate compliance" approach for demonstrating that planted crops and crop residue from the U.S. complies with the "renewable biomass" requirements that address lands from which qualifying feedstocks may be harvested.[163] In the 2010 RFS2 rulemaking, EPA established a baseline number of acres for U.S. agricultural land in 2007 (the year of EISA enactment) and determined that as long as this baseline number of acres was not exceeded, it was unlikely that new land outside of the 2007 baseline would be devoted to crop production based on historical trends and economic considerations. The regulations specify, therefore, that renewable fuel producers using planted crops or crop residue from the U.S. as feedstock in renewable fuel production need not undertake individual recordkeeping and reporting related to documenting that their feedstocks come from qualifying lands, unless EPA determines through one of its annual evaluations that the 2007 baseline acreage of 402 million acres agricultural land has been exceeded.

In the 2010 RFS2 rulemaking, EPA committed to make an annual finding concerning whether the 2007 baseline amount of U.S. agricultural land has been exceeded in a given year. If the baseline is found to have been exceeded, then producers using U.S. planted crops and crop residue as feedstocks for renewable fuel production would be required to comply with individual recordkeeping and reporting requirements to verify that their feedstocks are renewable biomass.

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[163] 40 CFR 80.1454(g).

The Aggregate Compliance methodology provided for the exclusion of acreage enrolled in the Grassland Reserve Program (GRP) and the Wetlands Reserve Program (WRP) from the estimated total U.S. agricultural land. However, the 2014 Farm Bill terminated the GRP and WRP as of 2013 and USDA established the Agriculture Conservation Easement Program (ACEP) with wetlands and land easement components. The ACEP is a voluntary program that provides financial and technical assistance to help conserve agricultural lands and wetlands and their related benefits. Under the Agricultural Land Easements (ACEP–ALE) component, USDA helps Indian tribes, state and local governments, and non-governmental organizations protect working agricultural lands and limit non-agricultural uses of the land. Under the Wetlands Reserve Easements (ACEP–WRE) component, USDA helps to restore, protect and enhance enrolled wetlands. The WRP was a voluntary program that offered landowners the opportunity to protect, restore, and enhance wetlands on their property. The GRP was a voluntary conservation program that emphasized support for working grazing operations, enhancement of plant and animal biodiversity, and protection of grassland under threat of conversion to other uses.

USDA and EPA concur that the ACEP–WRE and ACEP–ALE represent a continuation in basic objectives and goals of the original WRP and GRP. Therefore, in preparing this year's assessment of the total U.S. acres of agricultural land, the acreage enrolled in the ACEP–WRE and ACEP–ALE was excluded.

Based on data provided by the USDA Farm Service Agency (FSA) and Natural Resources Conservation Service (NRCS), we have estimated that U.S. agricultural land reached approximately 376 million acres in

2017, and thus did not exceed the 2007 baseline acreage. This acreage estimate is based on the same methodology used to set the 2007 baseline acreage for U.S. agricultural land in the RFS2 final rulemaking, with the GRP and WRP substitution as noted above. Specifically, we started with FSA crop history data for 2017, from which we derived a total estimated acreage of 379,220,752 acres. We then subtracted the ACEP–ALE and ACEP–WRE enrolled areas by the end of Fiscal Year 2017, 2,777,887 acres, to yield an estimate of 376,442,865 acres or approximately 376 million acres of U.S. agricultural land in 2017. The USDA data used to make this derivation can be found in the docket to this rule.[164]

B. Assessment of the Canadian Aggregate Compliance Approach

The RFS regulations specify a petition process through which EPA may approve the use of an aggregate compliance approach for planted crops and crop residue from foreign countries.[165] On September 29, 2011, EPA approved such a petition from the Government of Canada.

The total agricultural land in Canada in 2017 is estimated at 117.8 million acres. This total agricul-

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[164] As in 2016, USDA again provided EPA with 2017 data from the discontinued GRP and WRP programs. Given this data, EPA estimated the total U.S. agricultural land both including and omitting the GRP and WRP acreage. In 2017, combined land under GRP and WRP totaled 349,146 acres. Subtracting the GRP, WRP, ACEP–WRE, and ACEP–ALE acreage yields an estimate of 376,093,719 acres or approximately 376 million total acres of U.S. agricultural land in 2017. Omitting the GRP and WRP data yields approximately the same 376 million acres of U.S. agricultural land in 2017.

[165] 40 CFR 80.1457.

tural land area includes 95.5 million acres of cropland and summer fallow, 12.5 million acres of pastureland and 9.8 million acres of agricultural land under conservation practices. This acreage estimate is based on the same methodology used to set the 2007 baseline acreage for Canadian agricultural land in EPA's response to Canada's petition. The data used to make this calculation can be found in the docket to this rule.

C. RIN Market Operation

Some stakeholders have expressed concerns that the current regulatory provisions related to RIN trading render the RFS program vulnerable to market manipulation. The EPA takes such issues seriously. The RIN system was originally designed with an open trading market in order to maximize its liquidity and ensure a robust marketplace for RINs. However, the EPA is interested in assessing whether and how the current trading structure provides an opportunity for market manipulation. To that effect, the EPA sought comment and input on this issue, including on potential changes to the RIN trading system that might help address these concerns. We received comments from stakeholders suggesting a number changes to the RIN trading system. While EPA received many comments that are helpful to highlight opportunities for improvement to the RIN system, we are not in a position to make significant changes to the RIN system at this time. However, we intend to explore these suggested changes and are open to suggestions for making changes in the future that are within our authority and would help to improve the function and liquidity of the RIN system.

Separate from evaluating the RIN trading options in the RFS program, the EPA is working with appropriate market regulators to analyze targeted concerns of

some stakeholders. Although the EPA has not seen evidence of manipulation in the RIN market, the EPA is not a commodity market regulatory agency, and thus we do not have expertise in this field. Claims of market manipulation prompted the EPA to execute a memorandum of understanding (MOU) with the U.S. Commodity Futures Trading Commission (CFTC), which has the authority and expertise to investigate such claims.

In the meantime, the EPA has continued to explore additional ways to increase program transparency in order to support the program and share data with all stakeholders. The EPA already publishes RFS program data on our Web site, including data related to RIN generation, sales and holdings, and annual compliance.[166] We are interested in providing more information, to the extent consistent with our obligations to protect confidential business information (CBI). The EPA sought comment on specific data elements and posting frequency that stakeholders believe would be useful to help with market transparency and liquidity. We received comments from stakeholders suggesting a number of different types of data that commenters suggested would be useful to the industry and public. The EPA will need to further evaluate each of these suggestions to determine which information we can be post and, if so, whether we can post it at the frequency that was suggested by the commenters. Our decisions with respect to these suggestions must necessarily strike a balance between achieving the greatest transparency possible, while working within the limitations of our authority and resources (including technology

[166] For public data on the RFS and other EPA fuel programs, refer to: https://www.epa.gov/fuels-registration-reporting-and-compliance-help/public-data-and-registration-lists-fuel-programs.

systems), and protecting information that is claimed as CBI.

IX. Public Participation

Many interested parties participated in the rulemaking process that culminates with this final rule. This process provided opportunity for submitting written public comments following the proposal that we published on July 21, 2017 (82 FR 34206), and we also held a public hearing on August 1, 2017, at which many parties provided both verbal and written testimony. All comments received, both verbal and written, are available in Docket ID No. EPA–HQ–OAR–2017–0091 and we considered these comments in developing the final rule. Public comments and EPA responses are discussed throughout this preamble and in the accompanying Response to Comment document, which is available in the docket for this action.

X. 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 an economically 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. The EPA prepared an analysis of illustrative costs associated with this action. This analysis is presented in Section IV.E of this preamble.

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 EPA's analysis of the illustrative costs associated with this action. This analysis is presented in Section IV.E of this preamble.

C. Paperwork Reduction Act (PRA)

This action does not impose any new information collection burden under the PRA. OMB has previously approved the information collection activities contained in the existing regulations and has assigned OMB control numbers 2060–0637 and 2060–0640. The final standards will not impose new or different reporting requirements on regulated parties than already exist for the RFS program.

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. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden, or otherwise has a positive economic effect on the small entities subject to the rule.

The small entities directly regulated by the RFS program are small refiners, which are defined at 13 CFR 121.201. We have evaluated the impacts of this final rule on small entities from two perspectives: As if the 2018 standards were a standalone action or if they are a part of the overall impacts of the RFS program as a whole.

When evaluating the standards as if they were a standalone action separate and apart from the original rulemaking which established the RFS2 program, then

the standards could be viewed as increasing the advanced and total renewable fuel volumes required of obligated parties by 10 million gallons between 2017 and 2018. To evaluate the impacts of the volume requirements on small entities relative to 2017, EPA has conducted a screening analysis[167] to assess whether it should make a finding that this action would not have a significant economic impact on a substantial number of small entities. Currently available information shows that the impact on small entities from implementation of this rule would not be significant. EPA has reviewed and assessed the available information, which shows that obligated parties, including small entities, are generally able to recover the cost of acquiring the RINs necessary for compliance with the RFS standards through higher sales prices of the petroleum products they sell than would be expected in the absence of the RFS program.[168] [169] This is true whether they acquire RINs by purchasing renewable fuels with attached RINs or purchase separated RINs. The costs of the RFS program are thus generally being passed on to consumers in the highly competitive

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[167] "Screening Analysis for the Final Renewable Fuel Standard Program Renewable Volume Obligations for 2018," memorandum from Dallas Burkholder, Nick Parsons, and Tia Sutton to EPA Air Docket EPA–HQ–OAR–2017–0091.

[168] For a further discussion of the ability of obligated parties to recover the cost of RINs see "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effects," Dallas Burkholder, Office of Transportation and Air Quality, US EPA. May 14, 2015, EPA Air Docket EPA–HQ–OAR–2015–0111.

[169] Knittel, Christopher R., Ben S. Meiselman, and James H. Stock. "The Pass-Through of RIN Prices to Wholesale and Retail Fuels under the Renewable Fuel Standard." Working Paper 21343. NBER Working Paper Series. Available online at http://www.nber.org/papers/w21343.pdf.

marketplace. Even if we were to assume that the cost of acquiring RINs were not recovered by obligated parties, and we used the maximum values of the illustrative costs discussed in Section IV.E of this preamble and the gasoline and diesel fuel volume projections and wholesale prices from the October 2017 version of EIA's Short-Term Energy Outlook, and current wholesale fuel prices, a cost-to-sales ratio test shows that the costs to small entities of the RFS standards are far less than 1 percent of the value of their sales.

While the screening analysis described above supports a certification that this rule would not have a significant economic impact on small refiners, we continue to believe that it is more appropriate to consider the standards as a part of ongoing implementation of the overall RFS program. When considered this way, the impacts of the RFS program as a whole on small entities were addressed in the RFS2 final rule (75 FR 14670, March 26, 2010), which was the rule that implemented the entire program required by the Energy Independence and Security Act of 2007 (EISA 2007). As such, the Small Business Regulatory Enforcement Fairness Act (SBREFA) panel process that took place prior to the 2010 rule was also for the entire RFS program and looked at impacts on small refiners through 2022.

For the SBREFA process for the RFS2 final rule, EPA conducted outreach, fact-finding, and analysis of the potential impacts of the program on small refiners, which are all described in the Final Regulatory Flexibility Analysis, located in the rulemaking docket (EPA–HQ–OAR–2005–0161). This analysis looked at impacts to all refiners, including small refiners, through the year 2022 and found that the program would not have a significant economic impact on a substantial

number of small entities, and that this impact was expected to decrease over time, even as the standards increased. For gasoline and/or diesel small refiners subject to the standards, the analysis included a cost-to-sales ratio test, a ratio of the estimated annualized compliance costs to the value of sales per company. From this test, it was estimated that all directly regulated small entities would have compliance costs that are less than one percent of their sales over the life of the program (75 FR 14862, March 26, 2010).

We have determined that this final rule will not impose any additional requirements on small entities beyond those already analyzed, since the impacts of this rule are not greater or fundamentally different than those already considered in the analysis for the RFS2 final rule assuming full implementation of the RFS program. This rule establishes the 2018 advanced and total renewable fuel volume requirements at levels 10 million gallons higher than the 2017 volume requirements, and significantly below the statutory volume targets. This exercise of EPA's waiver authority reduces burdens on small entities, as compared to the burdens that would be imposed under the volumes specified in the Clean Air Act in the absence of waivers—which are the volumes that we assessed in the screening analysis that we prepared for implementation of the full program. Regarding the BBD standard, we are maintaining the volume requirement for 2019 at the same level as 2018. While this volume is an increase over the statutory minimum value of 1 billion gallons, the BBD standard is a nested standard within the advanced biofuel category, which we are significantly reducing from the statutory volume targets. As discussed in Section VI, we are setting the 2019 BBD volume requirement at a level below what is anticipated will be produced and used to satisfy the reduced

advanced biofuel requirement. The net result of the standards being established in this action is a reduction in burden as compared to implementation of the statutory volume targets, as was assumed in the RFS2 final rule analysis.

While the rule will not have a significant economic impact on a substantial number of small entities, there are compliance flexibilities in the program that can help to reduce impacts on small entities. These flexibilities include being able to comply through RIN trading rather than renewable fuel blending, 20 percent RIN rollover allowance (up to 20 percent of an obligated party's RVO can be met using previous-year RINs), and deficit carry-forward (the ability to carry over a deficit from a given year into the following year, providing that the deficit is satisfied together with the next year's RVO). In the RFS2 final rule, we discussed other potential small entity flexibilities that had been suggested by the SBREFA panel or through comments, but we did not adopt them, in part because we had serious concerns regarding our authority to do so.

Additionally, as we realize that there may be cases in which a small entity may be in a difficult financial situation and the level of assistance afforded by the program flexibilities is insufficient. For such circumstances, the program provides hardship relief provisions for small entities (small refiners), as well as for small refineries.[170] As required by the statute, the RFS regulations include a hardship relief provision (at 40 CFR 80.1441(e)(2)) that allows for a small refinery to petition for an extension of its small refinery exemption at any time based on a showing that compliance with the requirements of the RFS program would result

[170] See CAA section 211(o)(9)(B).

in the refinery experiencing a "disproportionate economic hardship." EPA regulations provide similar relief to small refiners that are not eligible for small refinery relief (see 40 CFR 80.1442(h)). EPA evaluates these petitions on a case-by-case basis and may approve such petitions if it finds that a disproportionate economic hardship exists. In evaluating such petitions, EPA consults with the U.S. Department of Energy, and takes the findings of DOE's 2011 Small Refinery Study and other economic factors into consideration. EPA successfully implemented these provisions by evaluating petitions for exemption from 14 small refineries for the 2016 RFS standards.[171]

Given that this final rule would not impose additional requirements on small entities, would decrease burden via a reduction in required volumes as compared to statutory volume targets, would not change the compliance flexibilities currently offered to small entities under the RFS program (including the small refinery hardship provisions we continue to successfully implement), and available information shows that the impact on small entities from implementation of this rule would not be significant viewed either from the perspective of it being a standalone action or a part of the overall RFS program, we have therefore concluded that this action would have no net regulatory burden for directly regulated small entities.

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

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[171] EPA is currently evaluating 2 additional 2016 petitions, bringing the total number of petitions for 2016 to 16.

specifically and explicitly set forth in CAA section 211(o) and we believe that this action represents the least costly, most cost-effective approach to achieve the statutory requirements of the rule.

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. This final rule will be implemented at the Federal level and affects transportation fuel refiners, blenders, marketers, distributors, importers, exporters, and renewable fuel producers and importers. Tribal governments would be affected only to the extent they produce, purchase, and use regulated fuels. Thus, Executive Order 13175 does not apply to this action.

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

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

ments specific standards established by Congress in statutes (CAA section 211(o)) and 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. This action establishes the required renewable fuel content of the transportation fuel supply for 2018, consistent with the CAA and waiver authorities provided therein. The RFS program and this rule are designed to achieve positive effects on the nation's transportation fuel supply, by increasing energy independence and lowering lifecycle GHG emissions of transportation fuel.

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

The 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). This final rule does not affect the level of protection provided to human health or the environment by applicable air quality standards. This action does not relax the control measures on sources regulated by the RFS regulations and therefore will not cause emissions increases from these sources.

L. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is a "major rule" as defined by 5 U.S.C. 804(2).

XI. 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 final rule comes from sections 114, 208, and 301(a) of the Clean Air Act, 42 U.S.C. 7414, 7542, and 7601(a).

List of Subjects in 40 CFR Part 80

Environmental protection, Administrative practice and procedure, Air pollution control, Diesel fuel, Fuel additives, Gasoline, Imports, Oil imports, Petroleum, Renewable fuel.

Dated: November 30, 2017.

E. Scott Pruitt,
Administrator.

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

PART 80—REGULATION OF FUELS 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 M—Renewable Fuel Standard

■ 2. Section 80.1405 is amended by adding paragraph (a)(9) to read as follows:

§80.1405 What are the Renewable Fuel Standards?

(a) * * *

(9) *Renewable Fuel Standards for 2018.*

(i) The value of the cellulosic biofuel standard for 2018 shall be 0.159 percent.

(ii) The value of the biomass-based diesel standard for 2018 shall be 1.74 percent.

(iii) The value of the advanced biofuel standard for 2018 shall be 2.37 percent.

(iv) The value of the renewable fuel standard for 2018 shall be 10.67 percent.

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