Biotechnology Innovation Organization

July 11, 2016

The Honorable Gina McCarthy
Administrator, Environmental Protection Agency
Air and Radiation Docket and Information Center
Mailcode: 2822T
1200 Pennsylvania Avenue NW
Washington, DC 20460

Docket ID No. EPA-HQ-OAR-2016-0004

Dear Administrator McCarthy:

The Biotechnology Innovation Organization ("BIO") is pleased to comment on the U.S. Environmental Protection Agency's ("EPA's") recently published proposed rule, entitled **Renewable Fuel Standard ("RFS") Program: Standards for 2017 and Biomass-Based Diesel Volume for 2018"** ("proposed rule").[1]

BIO is the world's largest trade association representing biotechnology companies, academic institutions, state biotechnology centers and related organizations across the United States and in more than 30 other nations. BIO members are involved in the research and development of innovative healthcare, agricultural, and industrial and environmental biotechnology products. In the energy space, BIO represents over 75 companies leading the development of new technologies for producing conventional and advanced biofuels. Through the application of industrial biotechnology, BIO members are improving conventional biofuel processes, furthering advanced and cellulosic biofuel production technologies, and speeding development of new energy crops.

Our comments are divided into nine separate parts, as described in the table of contents on the next page.

[1] Renewable Fuel Standard Program: Standards for 2017 and Biomass-Based Diesel Volume for 2018, 81 Fed. Reg. 34778 (May 31, 2016), available at https://www.gpo.gov/fdsys/pkg/FR-2016-05-31/pdf/2016-12369.pdf ("Proposed Rule").

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TABLE OF CONTENTS

I. Introduction: Despite EPA staff's efforts, EPA's proposed rule is subject to major errors and flaws. The proposed 2017 volume requirements should be adjusted to address those problems.

OVERVIEW OF KEY POINTS

We appreciate EPA staff's diligent efforts to implement the RFS program despite political challenges. At the same time, we are compelled to note that the agency's interpretation of the relevant statutory provisions is inconsistent with the Clean Air Act ("CAA"). Relatedly, the agency's interpretation makes it impossible to estimate the fuel volume requirements that the agency is likely to set for any particular year, undermining the investments that are essential to achieving Congress's intent. BIO urges EPA to get the RFS back on track with a commitment to stable implementation of the program that tracks statutory requirements.

In addition, BIO respectfully submits that EPA can and should improve upon the proposed rule in a number of other respects – and should do so even if EPA were to hold to its interpretation of the statute as set forth in the proposed rule. In particular, we urge EPA to account more appropriately for the availability of advanced and other biofuels to meet statutory volume requirements, and to make significant changes to EPA's proposed reductions in volume requirements for advanced biofuel, cellulosic biofuel, and total renewable fuel.

Key elements of BIO's comments are as follows:

1. We continue to disagree with EPA's invocation of its general waiver authority. But assuming for purposes of discussion that EPA adheres to its position on this issue, EPA should set 2017 RVOs at significantly higher levels than the levels that are described in the proposed rule. Even under EPA's theory of its statutory authority, EPA should set 2017 RVOs at the highest levels feasible, to comply with the statutory requirements and to further Congress's intent. Under EPA's theory of the statute, EPA's proposed reductions in RVOs for 2017 are, as a general matter, too steep, and would unnecessarily destabilize the RFS program.

2. Subject to EPA's receipt of additional information that may warrant further increases, EPA should set the advanced biofuel RVO for 2017 at more than **4.6 billion gallons**, and the total renewable fuel RVO for 2017 at more than **19.6 billion gallons**. These numbers are calculated without taking into account the potential availability of carryover RIN credits (as noted immediately below), and therefore are almost certainly lower than the actual numbers that should be used by EPA in setting the advanced biofuel and total renewable fuel RVOs for 2017.

3. In setting the volumes, EPA should take into account the availability of **carryover Renewable Identification Number ("RIN") credits**, and should not exclude them from its calculation of available domestic supply

to be used in satisfying statutory volume requirements. The availability of RIN credits thus almost certainly requires increasing the numbers described above.

4. Even under EPA's theory of its statutory authority to waive volumes, EPA has no need to trigger the first step of a potential two-step "reset" (or "off-ramp") process for reassessing volumes, as described in 42 U.S.C. § 7545(o)(7)(F). Initiating such a reset process would be deeply destabilizing to the program, and is not required at this time.

BACKGROUND

Through 2013, the incentives created by the RFS statute, and EPA's program implementing the statute, had spurred investment, research and development, and commercialization of advanced and cellulosic biofuels. Up until this time, the advanced biofuels industry had been making significant investments to meet the requirements of the RFS. As a result, according to a 2014 footprint analysis conducted for Fuels America, the RFS creates $184.5 billion of economic output, 852,056 jobs, and $46.2 billion in wages and $14.5 billion in taxes each year in the United States.[2] In addition to being an economic driver, the RFS has been a critical piece of our nation's energy, climate, and security policy. It has spurred innovation beyond biofuels to the development of greener technologies and manufacturing processes while curbing our dependence on foreign oil. Over the RFS program's first ten years, it reduced greenhouse gas emissions by over 589 million metric tons and displaced nearly 1.9 billion barrels of foreign oil by replacing fossil fuels with homegrown biofuels.[3]

In late 2013, the prospects of the RFS program dimmed dramatically. That is when EPA issued its initial proposed rule for 2014 RFS Renewable Volume Obligations ("RVOs") (the "2014 RFS Proposal"). In the 2014 RFS Proposal, EPA announced its intention to undertake a sharp and surprising departure from EPA's prior approach to interpreting and implementing the statute.[4] The 2014 RFS Proposal inaugurated a destabilizing period for the program, which continues today. After a long delay --

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[2] *See* Fuels America, Fuels America Releases New Footprint Analysis: Renewable Fuel Drives Economic Growth, *available at* http://www.fuelsamerica.org/pages/fuels_america_releases_new_footprint_anaylsis; http://fuelsamerica.guerrillaeconomics.net/assets/site/res/2014%20Fuels%20America%20Methodology.pdf (Apr. 15, 2014) (providing detailed description of study results, data sources, and methodology).

[3] BIO, New Study: Biofuel Use Saved 589.3 Million Tons of Carbon Emissions Over the Past Decade (Aug. 2015), *available at* https://www.bio.org/media/press-release/new-study-biofuel-use-saved-5893-million-tons-carbon-emissions-over-past-decade.

[4] 2014 Standards for the Renewable Fuel Standard Program, 78 Fed. Reg. 71732 (Nov. 29, 2013), *available at* http://www.gpo.gov/fdsys/pkg/FR-2013-11-29/pdf/2013-28155.pdf ("2014 RFS Proposal").

over a year and a half of regulatory and investment uncertainty for market participants -- EPA acted in June 2015 to withdraw the 2014 RFS Proposal and to replace it with a proposed rule to govern RVOs for 2014, 2015, and 2016 (the "2014-2016 RFS Proposal").[5] The 2014-2016 RFS Proposal continued to rely on EPA's new approach to interpreting and applying the RFS law. EPA then followed up on the proposal by issuing a final rule to govern RVOs for 2014, 2015, and 2016 (the "2014-2016 RFS Rule").[6] In this final rule, EPA took final action based on EPA's new regulatory approach.

BIO and its members, and other market participants, have now experienced over two and a half years of regulatory uncertainty, confusion, and lost opportunities attributable to EPA's departure (first proposed by EPA in late 2013, and implemented by EPA in late 2015) from the basic purposes and requirements of the RFS statute. The 2014 RFS Proposal and ensuing EPA actions have undermined the basic goals of the RFS and have chilled investment in the biofuels industry -- particularly in the development of advanced and cellulosic biofuels, which are required by statute to result in lower greenhouse gas emissions. The results have been to impede the development of a domestic sustainable alternative to petroleum and to increase greenhouse gas emissions and our dependence on foreign sources of oil in the transportation fuel sector. As explained below, growth in the industry has stalled, resulting in a shortfall of about $22.4 billion in investment for advanced and cellulosic biofuels; and if left unchanged, the proposed rule will result in an increase in greenhouse gas emissions above achievable levels by 44.3 million metric tons in 2017. These outcomes are the opposite of what Congress intended in enacting the statute and creating the program.[7]

Among other things, the RFS program has been seriously impeded by EPA's unwarranted and unlawful expansion of its general waiver authority in setting annual Renewable Volume Obligations under the RFS statute. As BIO pointed out in its comments on the 2014 RFS Proposal and in its comments on the 2014-2016 RFS Proposal, EPA's approach to setting biofuel volumes violates the law and has undermined certainty and predictability for investors and other market participants, with negative environmental and economic consequences that run contrary to

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[5] *See* Renewable Fuel Standard Program: Standards for 2014, 2015, and 2016 and Biomass-Based Diesel Volume for 2017; Proposed Rule, 80 Fed. Reg. 33100, 33104 n.12, 33117 n.46 (June 10, 2015), *available at* https://www.gpo.gov/fdsys/pkg/FR-2015-06-10/pdf/2015-13956.pdf ("2014-2016 RFS Proposal").

[6] Renewable Fuel Standard Program: Standards for 2014, 2015, and 2016 and Biomass-Based Diesel Volume for 2017; Final Rule, 80 Fed. Reg. 77420 (December 14, 2015), available at https://www.gpo.gov/fdsys/pkg/FR-2015-12-14/pdf/2015-30893.pdf ("2014-2016 RFS Rule").

[7] *See* Senator Chuck Grassley, *As EPA Finalizes Rule, Grassley, Klobuchar Lead Bipartisan Group of 39 Senators in Calling for a Strong Renewable Fuel Standard for 2017*, *available at* http://www.grassley.senate.gov/sites/default/files/constituents/6.24.16%20Grassley-Klobuchar%20EPA%20RFS%20letter.pdf (Jun. 2016).

Congress's purposes in enacting the statute.[8] As we stated last year, EPA has broken the promise of the RFS on which biofuels producers and other market participants relied when making investment decisions. The 2014-2016 RFS Rule is now being challenged by BIO and other stakeholders in the U.S. Court of Appeals in the D.C. Circuit on a number of grounds. Regrettably, the current proposed rule continues to reflect the major flaws in the approach embodied in the 2014-2016 RFS Rule.

II. As in the 2014-2016 RFS rule, EPA's interpretation of its general waiver authority is impermissibly broad.

In proposing reductions to Renewable Volume Obligations for 2017, EPA relies in part on the interpretation of EPA's RFS waiver authority embodied in the 2014-2016 RFS Rule.[9] In BIO's comments on the 2014-2016 RFS Proposal, we provided detailed analysis showing that EPA has impermissibly interpreted its authority in this regard.[10] The same analysis applies today.

Clean Air Act section 211(o)(7)(A) (42 U.S.C. § 7545(o)(7)(A)) provides EPA its general waiver authority under the RFS. For its proposed 0.2 billion gallon reduction to the 2017 RVO for total renewable fuel utilizing this subparagraph, EPA relies only on the "inadequate domestic supply" provision of section 211(o)(7)(A).[11] EPA does not suggest that implementing the

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[8] *See* BIO Comments on 2014 Standards for the Renewable Fuel Standard Program; Proposed Rule, 78 Fed. Reg. 71732 (Nov. 29, 2013), *available at* https://www.bio.org/sites/default/files/files/BIO%20Comments-EPA%20PR%202014%20RFS%20RVOs-Docket%20ID%20No%20%20EPA-HQ-OAR-2013-0479.pdf (Jan. 28, 2014); BIO Comments on Renewable Fuel Standard Program: Standards for 2014, 2015, and 2016 and Biomass-Based Diesel Volume for 2017; Proposed Rule, 80 Fed. Reg. 33100 (June 10, 2015), *available at* https://www.bio.org/sites/default/files/files/EPA-HQ-OAR-2015-0111%20-%20BIO%202014-2016%20RFS%20Comments%20-%202015-07-27.pdf (Jul. 27, 2015) ("BIO Comments on Proposed 2014-2016 RVOs") (Exhibit A to these comments).

[9] Proposed Rule at 34785.

[10] *See generally* BIO Comments on Proposed 2014-2016 RVOs (Exhibit A to these comments).

[11] In relevant part, subparagraph (o)(7)(A) of the statute provides:

> The Administrator, in consultation with the Secretary of Agriculture and the Secretary of Energy, may waive the requirements of paragraph (2) in whole or in part on petition by one or more States, by any person subject to the requirements of this subsection, or by the Administrator on his own motion by reducing the national quantity of renewable fuel required under paragraph (2)—

statutory volume requirements "would severely harm the economy or environment of a State, a region, or the United States."

As we explained in our comments on the 2014-2016 RFS Proposal, the term "inadequate domestic supply" unambiguously refers to the supply of RFS qualified volumes of renewable fuels. EPA, therefore, may not interpret the term "inadequate supply" to include consideration of anything other than annual production capacity and expected availability of volumes of RFS qualifying renewable fuels, which can be available for transportation fuel. In particular, the agency may not consider other, demand-related factors, including "[o]verall gasoline demand," fuel "pricing," and fuel infrastructure, which do not determine supply.[12] Rather than repeat our detailed observations on this topic, we refer EPA to our comments on the 2014-2016 RFS Proposal, attached as **Exhibit A** to this document.

Applying the proper standard, there are expected to be more than adequate volumes of total renewable fuel available for use by obligated parties to meet the 2017 statutory requirements.[13] EPA thus does not need to rely on, and has no basis for invoking, the general waiver authority to reduce total renewable fuel volumes for 2017.[14] Very modest increases in the total renewable fuel RVO for 2017 would allow EPA to rely entirely on its cellulosic waiver authority in setting 2017 RVOs.

> (i) based on a determination by the Administrator, after public notice and opportunity for comment, that implementation of the requirement would severely harm the economy or environment of a State, a region, or the United States; or
>
> (ii) based on a determination by the Administrator, after public notice and opportunity for comment, that there is an inadequate domestic supply.

[12] *See, e.g.*, Proposed Rule at 34790.

[13] *See, e.g.*, *id.* (noting that ethanol "production and import capacity . . . is in excess of 15 billion gallons," and citing, as "constrain[ts]" on ethanol supply, only factors relating to demand and consumption, distribution infrastructure, and pricing).

[14] Under the proposed rule, the agency would use its cellulosic waiver authority to make an initial five billion gallon reduction to the total renewable fuel RVO to correspond with a proposed volume reduction in advanced biofuel RVOs, and would then use its general waiver authority to reduce the total renewable fuel RVO by another 200 million gallons. *Id*. at 34786. We discuss the cellulosic waiver authority in Part IV of these comments.

III. Even under EPA's interpretation of its statutory authority, EPA's proposed volumes for conventional, cellulosic, and advanced biofuels for 2017 are too low and should be revised significantly upward in EPA's final rule.

Even applying EPA's (mistaken) interpretation of "inadequate domestic supply," there is an ample domestic supply of renewable fuels available to allow EPA to avoid invoking the general waiver authority. EPA requests comment "on whether 14.4 billion gallons of ethanol is an appropriate volume to use in the determination of the applicable total renewable fuel volume requirement for 2017" and "on the projected supply of biodiesel and renewable diesel used as transportation fuel in the United States in 2017, as well as the factors that may enable or inhibit the growth in the supply of these fuels."[15] Our basic conclusion on these topics is that EPA has proposed volumes, and therefore RVOs, for 2017 that are too low even on EPA's theory of its authority.

In its proposed rule, EPA does not present a persuasive and proper justification for nonarbitrarily using its cellulosic waiver authority[16] to reduce the advanced and total renewable fuel volumes to nearly the same extent (5.0 billion gallons) to which it is proposing to reduce RVOs for cellulosic biofuels (5.188 billion gallons).[17] EPA has failed to show that there are insufficient potential gallons of advanced and total renewable fuels, used along with carryover RIN credits, to meet much higher volume requirements for those fuels.

Our proposed estimates, and the rationales for them, are described as follows.

[15] *Id.* at 34791 and 34796.

[16] *See* 42 U.S.C. § 7545(o)(7)(D)(i).

[17] *See* Proposed Rule at 34782, 34786, 34797, 34799.

A. EPA must adjust its estimates of ethanol, biomass-based diesel, advanced biofuel and total renewable fuel volumes.

The proposed 2017 RVOs are too low for a number of reasons. EPA has signaled its intention to use updated Energy Information Administration ("EIA") projections of gasoline and diesel fuel consumption.[18] Even relatively minor corrections to EPA's calculations based on new EIA data would substantially increase the estimated volumes of renewable fuels used by EPA to set the 2017 RVOs. Additionally, EPA's proposal replicates errors in estimating exports of renewable fuels that EPA has previously acknowledged making, which errors result in a mistaken estimate of achievable growth rates for biomass-based diesel. Correcting EPA's errors on these issues will result in increased advanced and total fuel volumes; will obviate any use of the general waiver authority; and will avoid triggering the potential initiation of unnecessary "reset" ("off-ramp") processes pursuant to Clean Air Act section 211(o)(7)(F) (42 U.S.C. § 7545(o)(7)(F)).

Projected ethanol volume. EPA derives its estimated ethanol volume of 14.4 billion gallons from a previous Energy Information Administration projection [EPA-HQ-OAR-2016-0004-0017], combined with internal estimates of use of E15, E85 and E0, which are variously detailed in memos submitted to the docket. In more recent projections for 2017, including the June Short Term Energy Outlook[19], EIA has increased its projected gasoline use for 2017 by nearly 1 billion gallons (from 142 to 143 billion gallons). EIA further projects use of E85 fuel in 2017 at 735 million gallons in the 2016 Annual Energy Outlook.[20] This projection for E85 is considerably higher than EPA's internal projections of 200 to 400 million gallons, but is not outside the realm of possibility that EPA has recognized in its scenarios. The higher volume of E85 use is also justified by the increased projection of fuel use. Simple corrections to EPA's calculations based on these updated EIA projections – outlined in the table below – would increase EPA's projection of ethanol use from 14.4 billion gallons to nearly 14.8 billion gallons.

[18] *Id.* at 34780.

[19] *See* http://www.eia.gov/forecasts/steo/.

[20] *See* http://www.eia.gov/forecasts/aeo/.

Table 1: Recalculation of EPA Estimate of Ethanol Use for 2017

	Gallons	Ethanol Use
Gasoline	143 billion	
E0	0.2 billion	
E85	0.735 billion	0.544 billion
E15	0.600 billion	.09 billion
E10	141.465 billion	14.147 billion
Total		14.781 billion

Data from EIA 2016 Annual Energy Outlook, June 2016 STEO, and EPA estimates of E0 and E15 use shown in proposed rule[21]*.*

Projected biomass-based diesel volume. Likewise, a simple correction to EPA's calculation of the ethanol equivalency of biomass-based diesel supply would increase the projected supplies of biodiesel and renewable diesel. EPA clearly recognizes that renewable diesel consumption, which earns 1.7 RINs per gallon based on ethanol equivalency, is growing and has fewer barriers to growth compared to biodiesel. The Energy Information Administration also recognizes this in making projections for the 2016 Annual Energy Outlook. Yet EPA calculates the entire projected supply of biomass-based diesel for 2017 as if it is all biodiesel, earning just 1.5 RINs per gallon. An adjusted ratio of RINs per gallon for biomass-based diesel, accounting for relative volumes of biodiesel and renewable diesel and using either 2015 or 2016 as a baseline, would produce an ethanol equivalency conversion ratio of 1.55 RINs per gallon. EPA acknowledges and corrects this error elsewhere in the proposed rule, in Table IV.B.1-1. If EPA were to apply this correction to its RIN calculations, EPA's estimation of 2.7 billion gallons of biomass-based diesel use in 2017 would generate 4.185 billion RINs, compared to the 4.050 billion RINs that EPA currently counts.

EPA's Table II.C.3-1[22] would thus be recalculated as follows:

Table 2: Recalculation of Table II.C.3-1

Ethanol	14,781
Biomass-based diesel	4,185/2,700
Biogas	285
Other, non-ethanol renewable fuels	50
Total Renewable Fuel	**19,301**

[21] *See* Proposed Rule at 34790, 34799, 34800; *see also id.* at 34800-01 (noting alternative possibility that E15 volumes could be as high as 800 million gallons in 2017).

[22] *Id.* at 34796.

Supply of conventional biofuels. We note that the mathematical corrections that we have described would make it wholly unnecessary for EPA to invoke its general waiver authority to lower the overall RVOs based on its calculation of an "inadequate domestic supply" of conventional biofuel. EPA has calculated that all but 227 million gallons of ethanol, plus 400 million gallons of biomass-based diesel, will be conventional biofuels. Further, a small portion of the other, non-ethanol renewable fuels (primarily butanol, with an ethanol equivalency of 1.3 RINs per gallon) are also expected to be conventional. Using the corrected calculation of available volumes for 2017 in Table 2 above, the available supply of conventional biofuels for 2017 (applying EPA's conception of supply) would exceed the 15 billion gallon maximum for conventional biofuels allowed to meet RVOs for 2017, as shown below in Table 3. In fact the supply would exceed the limit by nearly 200 million gallons, rather than fall short by EPA's estimate of 200 million. EPA can rely solely on its cellulosic waiver authority to alleviate any inadequacy of supply in both advanced and total renewable fuel volumes.

Table 3: Recalculation of Available Supplies of Conventional Biofuel for 2017

	RINs/gallons (millions)
Conventional Ethanol	14,554
Conventional Biomass Based Diesel	620/400
Conventional other	0.13/0.1
Total	**15,174.13**

We also note that when these mathematical corrections are taken into account, they make clear that EPA has no basis for triggering the first step of a potential two-step "reset" (or "off-ramp") process for reassessing volumes. The reset process is the procedure set forth in Clean Air Act section 211(o)(7)(F) (42 U.S.C. § 7545(o)(7)(F)) for initiating modification of the remaining years of a statutory table of fuel volumes when one of two conditions is met. One of those triggering conditions is satisfied when EPA waives "at least 20 percent of the applicable volume requirement" for a particular category of renewable fuel "for 2 consecutive years."[23] As to total renewable fuels, taking steps toward initiating such a reset process would be deeply destabilizing to the program, and is clearly not required at this time. Even a tentative first step toward "reset" would further exacerbate the policy instability and uncertainty that have frustrated Congress's goals in recent years by discouraging investment in the RFS program, further damaging development of robust use of biofuels at ambitious increasing volumes.

As EPA acknowledges, "for the industry to have the incentive to invest in the development of new technology and expanded infrastructure for production, distribution, and dispensing capacity," it is "necessary" to have "[v]olume requirements over the longer term that are issued in a timely manner and which

[23] 42 U.S.C. § 7545(o)(7)(F).

provide the certainty of a guaranteed and growing future market."[24] Beginning a process of potentially "resetting" (or "off-ramping") the remaining years in the entire statutory table of fuel volumes for a category of fuels would eliminate the certainty that Congress provided in enacting the table into law. It could also have the perverse and unintended effect of rendering a large number of carryover RINs superfluous. If the statutory numbers are lowered via a reset process, it is quite possible that they would be rendered so low as to make it very unlikely, or impossible, for the full supply of carryover RINs available in any given year to be used in that year without leading to a major increase in the supply of carryover RINs available in the following year. In that scenario, it would be most likely either that many RINs would expire, or, in the alternative, that the so-called RIN bank would become far greater than envisioned by EPA. EPA can and should elect to defer to another year the decision whether to consider waiving volumes that would have the effect of triggering the (7)(F) waiver for total renewable fuel volumes.

It need hardly be said (and EPA agrees) that triggering the (7)(F) waiver cannot be a permissible justification or reason for reducing volume obligations under the agency's general or cellulosic waiver authorities. A desire or intention to trigger the (7)(F) waiver simply is not relevant to the legal criteria for triggering the provisions governing either of these statutory waivers, even assuming that EPA's interpretation of its waiver authority is correct.[25] At the same time – and assuming for purposes of argument both the correctness of EPA's interpretation of its waiver authority and the correctness of EPA's view that EPA has authority to maintain a "RIN bank" – EPA's interest in avoiding reset, and in avoiding reset's destabilizing consequences for Congress's goals in establishing the RFS program, would be a legitimate reason for setting volume levels that would avoid beginning the reset process in 2017 or any other year, even at the cost of incurring some risk of drawing down or partially drawing down the RIN bank.[26]

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[24] Proposed Rule at 34784; *cf. id.* at 34793 ("Low oil prices . . . present a challenge to the expansion of biodiesel distribution infrastructure, since such projects generally have long payback timelines and parties 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[.]").

[25] See EPA OTAQ, "Renewable Fuel Standards for 2014, 2015 and 2016, and the Biomass-Based Diesel Volume for 2017: Response to Comments." EPA-420-R-15-024, November 2015, at 818 ("Response to Comments for 2014-2016 RFS Rule") (stating that EPA had reached volume-setting decisions "based on the technical merits without regard to their resultant impact on triggering the reset provisions").

[26] In other words: if EPA has the statutory flexibility to use the general waiver authority based on a wide range of factors; and if EPA has the statutory flexibility to create and maintain a RIN bank, then the same statutory flexibility, considered in light of the fundamental goals of the statute, should allow EPA to take into account the goal of avoiding reset in making volume-setting decisions.

Advanced biofuel volumes. EPA's mathematical errors also have implications for advanced biofuel volume requirements for 2017. EPA has replicated errors from prior years in estimating RINs that are not available to meet annual compliance obligations. EPA's estimate of the 2017 supply for biomass-based diesel is based on its final RVOs for 2016 plus the average annual growth rate from 2011 to 2015.[27] EPA is underestimating achievable growth in 2017 through systematic errors in calculating biomass-based diesel exports.

EPA uses projections of exported biodiesel from the Energy Information Administration to estimate the number of RINs that have been or will be separated for exports and will therefore be unavailable to obligated parties to meet annual obligations. In the 2014-2016 RFS Rule, EPA demonstrated the systematic differences between EIA estimates of exported biodiesel and EPA Moderated Transaction System ("EMTS") data on RINs separated from exports of biomass-based diesel.[28] EPA also compared EMTS data to export estimates from the U.S. International Trade Commission, indicating they are nearly identical.[29] Yet, in the proposed rule, EPA once again uses demonstrably inaccurate export data from EIA in estimating RINs that will be unavailable to obligated parties for compliance. EPA is likely overestimating biodiesel exports in 2017 by using EIA data to calculate the average growth rate for biomass-based diesel. EPA should once again use the largest achievable growth rate and raise its estimate of available biomass-based diesel consumption to 2.9 billion gallons, which the Agency recognizes is achievable.[30]

We note that we agree with EPA that it is appropriate to "backfill," to the extent feasible, any shortfall in cellulosic biofuel volumes with other advanced biofuels, which also provide substantial greenhouse gas emissions reductions.[31] But EPA's initial proposal provides for only very modest backfilling. The proposed rule would waive the cellulosic biofuel volume for 2017 by 5.188 billion gallons, and the advanced biofuel volume for 2017 by 5.0 billion gallons – a backfilling difference of merely 188 million gallons. Given the strength of biodiesel and other advanced biofuels capacities, significantly more backfilling can easily occur.[32] Indeed, the

[27] Proposed Rule at 34795.

[28] 2014-2016 RFS Rule at 77446.

[29] "Comparison of Export Data Between EMTS and ITC for 2015," EPA-HQ-OAR-2015-0111-3612.

[30] Proposed Rule at 34794.

[31] *See id.* at 34782; *cf. id.* at 34797 (noting compensation for cellulosic biofuel shortfall by advanced biofuel in 2016 RVOs decision).

[32] We offer two additional observations on this topic here:

proposed rule itself suggests that serious consideration should be given to increasing the 2017 volume requirements for both conventional biofuel and advanced biofuel based on new data about conventional biodiesel and renewable diesel.[33] As explained here, it is appropriate and achievable for EPA to provide for more substantial backfilling.

We further note that EPA appears inappropriately to be basing advanced biofuel production projections for coming years on past-year performance, rather than on production or distribution capacity under development. In setting 2017 advanced biofuel volumes, EPA openly assumes "that the supply of conventional and advanced biodiesel and renewable diesel volumes would be equal to those supplied in 2015."[34] EPA also states that "[u]sing 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."[35] Such an approach slows growth of advanced biofuel production by limiting market capacity each year, rather than taking a neutral aim at the most likely future numbers, in keeping with D.C. Circuit guidance. As EPA has said, "a simple projection of historical data is not an appropriate method for projecting future production from a new industry."[36] Limitation on market capacity directly depresses investment in production, as EPA has recognized.[37]

It follows that the required advanced biofuel volume for 2017 should be **over 4.6 billion gallons**. EPA should recalculate the volumes used to determine the proposed advanced biofuel RVOs using 2.9 billion gallons of biomass-based diesel and requiring that additional volumes be advanced biofuels, based on the corrected projection of an oversupply of conventional biofuels. EPA should also continue to

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- First, price fluctuations relating to Brazilian sugarcane ethanol, as discussed at *id.* at 34797, would seem to be an improper basis for limiting advanced biofuel volumes. To the extent that fluctuations may be expected, robust advanced biofuel volumes would increase the incentives for investments in competitive advanced biofuels available in the United States.

- Second, the proposed rule notes that "imports of biodiesel and renewable diesel reached about 560 million gallons in 2015 and there is no reason to believe that such imports would be substantially less in 2017." *Id.* at 34801. EPA should consider whether the estimated number for 2017 should be increased.

[33] *Id.* at 34798.

[34] *Id.* at 34786.

[35] *Id.* at 34795.

[36] Response to Comments for 2014-2016 RFS Rule, at 542.

[37] *See, e.g.*, *id.* at 149; *see also* Proposed Rule at 34784.

correct its ethanol equivalency ratio for biomass-based diesel when calculating advanced biofuel volumes. EPA should recalculate Table II.D-2 in its proposal along the following lines:

Table 4: Recalculation of Table II.D-2

	RINs/gallons (millions)
Cellulosic biofuel	312[38]
Advanced biomass-based diesel	3,875/2,500
Imported sugarcane ethanol	200
Other non-ethanol advanced	49
Additional advanced requirement (from Table 3 above)	174
Total	4,610

Summary. As explained immediately above, the advanced biofuel RVO for 2017 should be set at more than **4.6 billion gallons**. Adding a minimum 15 billion gallons of conventional biofuel to this number, the total renewable fuel RVO for 2017 should be set at more than **19.6 billion gallons**, at minimum.

We emphasize that these numbers are calculated without taking into account the potential availability of carryover RIN credits (as discussed in Part V below), and therefore are almost certainly lower than the actual numbers that should be used by EPA in setting the advanced biofuel and total renewable fuel RVOs for 2017.

B. EPA must adjust its cellulosic biofuel volume projections.

In setting the cellulosic RVO each year, EPA conducts a survey of the production intentions of commercial-scale cellulosic biofuel producers in the United States. A neutral assessment of these direct discussions with producers generates the best available projection of what will actually happen in the market during the coming year. With one discrete exception (discussed below), EPA's methodology for setting the annual cellulosic and advanced RVOs was upheld by the D.C. Circuit in 2013 when challenged in *American Petroleum Institute v. EPA* (*API v. EPA*).[39]

EPA has reaffirmed its intention to "include all cellulosic biofuel projected volume available each year, up to the statutory volumes" in its annual RVOs.[40] Yet EPA's approach to cellulosic RVOs, as described in the proposed rule, impermissibly puts a thumb on the scale on the side of lower projections. Such an approach would not be

[38] We emphasize that this is a *minimum* number, based on the proposed rule. As explained in Part III.B below, there are a number of reasons why the final number should be significantly higher.

[39] 706 F.3d 474, 477-78, 480-81 (D.C. Cir. 2013).

[40] Response to Comments for 2014-2016 RFS Rule, at 536.

consistent with the statute, which provides that if there is a projected shortfall in cellulosic production, EPA must reduce the cellulosic volume requirement "to the projected volume available during that calendar year."[41] The statute ensures that the adjusted requirement is no higher than the projected volume available for the relevant calendar year; it also ensures that the adjusted requirement is no lower than that projected volume. For further discussion of this basic point, see Part IV of these comments, below.

EPA's proposed approach to setting cellulosic RVOs for 2017 has a number of significant flaws, which we urge EPA to correct as it proceeds to develop a final rule.

First, EPA must avoid giving undue weight in its 2017 calculations to historical production data, and must take care to treat individual production facilities on a case-by-case basis, rather than by applying across-the-board cuts to all facilities' projections.

Of course, historical data by themselves are inadequate to generate future projections of production from the advanced biofuel industry, which is currently starting up first-of-a-kind biorefineries. As noted above, EPA has acknowledged that "a simple projection of historical data is not an appropriate method for projecting future production from a new industry."[42] Nevertheless, EPA's proposed approach gives undue weight to historical numbers, and lumps producers into two groups ((1) a group of producers with a history of consistent cellulosic biofuel production and RIN generation, and (2) a group of producers without such a history), without adequately accounting for the circumstances of the individual producers within the group.

In particular, EPA discounts its much more carefully derived facility-specific production projections (the "high end" of the "projected production range" set by EPA[43]) by applying across-the-board "discounts" to production projections on a group-by-group, rather than producer-by-producer or facility-by-facility, basis. EPA does so using historical data (the "low end" – zero, for all companies that have not yet begun commercial-scale production) for all producers in a group (not considered individually) as the baseline against which to conduct the group-by-group discounting exercise.[44] For cellulosic biofuel, the result tilts in favor of lower

[41] 42 U.S.C. § 7545(o)(7)(D)(i).

[42] Response to Comments for 2014-2016 RFS Rule, at 542.

[43] Proposed Rule 34805.

[44] *See id.* at 34806 ("After defining likely production ranges for each *group* of companies we projected a likely production volume from each *group* of companies for 2017. We used the same percentile values to project a proposed production volume within the established ranges for 2017 as we did in the final rule for 2016; the 50th and 25th percentiles respectively for liquid cellulosic biofuel producers with and without a history of consistent cellulosic biofuel production and RIN generation, and the 75th and 50th percentiles

projections for both new facilities and facilities with a history of production deemed adequate by EPA:

> (1) All new cellulosic biofuel facilities, taken together, are assigned a proposed aggregate fuel volume that is merely 25% of the aggregate of the "high-end" facility-specific projections for those facilities.
>
> (2) All cellulosic biofuel facilities with an adequate history of production are assigned a proposed aggregate fuel volume that averages (i.e., splits the difference between) (A) the aggregate of a year's worth of historical RIN generation data for all those facilities and (B) the aggregate of the "high-end" facility-specific projections for those facilities.[45]

Although historical data need not be ignored, they should not be given decisive weight in projecting actual production numbers for 2017. And discounts based on historical data (particularly when there are no such data at all) should be made on an individualized basis, rather than across the board. Only through giving adequate and appropriate weight to data concerning individual producers and facilities can EPA confirm an accurate and neutral pace of production scale-up.[46]

Second, the 2017 cellulosic volumes will be incorrect if EPA does not work to take into account the capacities of several overseas cellulosic biofuel companies, which have completed the lengthy and costly Part 80 registration process to qualify to generate D3 or D7 RINs. EPA should continue to work with additional overseas companies to complete the registration process for facilities, enabling them to contribute volumes to meet the 2017 RVOs. EPA should streamline the registration process wherever feasible, to reduce unnecessary delays and costs that impede the achievement of the statutory goals. Moreover, EPA should base its projections on a careful survey of individual producers.

Third, EPA has excluded from its 2017 calculations volumes of cellulosic biofuels from all pathways that have been pending before the agency for some time and are awaiting approval. This all-or-nothing exclusion decision tilts in a non-neutral direction away from accurate prediction.

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respectively for producers of CNG/LNG from biogas with and without a history of consistent commercial-scale production and RIN generation.") (emphasis added).

[45] *See id.* at 34805-06.

[46] The proposed rule relies on the 2014-2016 RFS Rule for EPA's choice of across-the-board percentage figures to use in discounting facility-specific projections. *See id.* at 34806 n.70; 2014-2016 RFS Rule at 77506-07 (attempting to explain specific percentages). We respectfully submit that the 2014-2016 RFS Rule is not persuasive in this regard, and that EPA's decision to maintain using such across-the-board percentages for 2017 is arbitrary, and is not supported by recent experience.

EPA pledges to "continue to evaluate new pathways especially for advanced biofuels and respond to petitions, expanding the availability of feedstocks, production technologies, and fuel types eligible under the RFS program."[47] In its response to comments concerning its rule for 2014 through 2016, EPA indicated that "it may be possible to consider volumes for [pathways that have been submitted for consideration] in 2017."[48] Yet EPA did not do so in the proposed rule for 2017.

EPA is proposing the 2017 RFS volumes more than six months ahead of the start of the compliance year, which gives EPA significant lead time both (1) to make approval decisions on many pending pathway petitions and (2) to reliably estimate volumes related to pathways that are likely to be approved by the compliance year. When finalizing the 2017 RVOs, the agency should include anticipated volumes from companies that are expected to receive pathway approval and to begin production during the compliance period. Relatedly, as explained below in Part VI of these comments, EPA should take immediate action to expedite the pathway review and approval process, which will have the effect of increasing the available supply of advanced and cellulosic biofuels to meet the statutory volume requirements.

In the 2014-2016 RFS Rule, EPA suggested that estimating volumes from new pathways to be approved during the compliance year would be "inconsistent with our attempt at neutral projections."[49] But EPA's delay in approving a pathway is not a sufficient reason, without more analysis, to wholly exclude a company from EPA's projection for the RVO. To be sure, EPA has contended that "[a]ssuming the approval of new pathways, and the subsequent registration and production from new facilities using these pathways, is highly uncertain and inconsistent with our attempt at neutral projections, particularly for pathways that have not yet been proposed."[50] As a general matter, this is probably true of many (if not most) "pathways that have not yet been proposed," but many proposed pathways have been pending before the agency for several months or longer. As further explained in Part VI below, EPA can help mitigate this problem for both the short term and the long term by initiating immediate process improvements to speed up decisions on pathway petitions. But even before such process improvements are made, EPA can and should change its estimation process to include estimates of cellulosic biofuel production based on likely pathway approvals. To **completely** ignore the likely approval, by the compliance year, of **all** such pathways would be to underestimate likely actual numbers and to result in inaccurate projections of biofuels production figures. Such estimation errors are inconsistent with the requirements of the governing statute and do not conform with the D.C. Circuit's admonition in *API v.*

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[47] Proposed Rule at 34784.

[48] Response to Comments for 2014-2016 RFS Rule, at 542.

[49] 2014-2016 RFS Rule at 77507 n.219.

[50] *Id.*

EPA to take a neutral aim at accuracy in calculating cellulosic biofuel volumes.[51] Neutrality forbids overshooting the mark, but also forbids undershooting the mark.

EPA should anticipate (and actively work to complete) the timely approval of pathways and registration processes and should accurately include in the 2017 RVOs all reasonably anticipated volumes from companies that intend to begin producing qualifying fuels during the compliance year. We emphasize that EPA's rulemaking is being undertaken with sufficient lead time to make this possible.

C. EPA is miscalculating its estimate of 2018 biomass-based diesel volumes, which will help determine 2018 advanced biofuel volume requirements.

In projecting future volumes of biomass-based diesel, EPA reviews implementation of the RFS program to date, as the RFS statute requires for this fuel for calendar years after 2012.[52] In projecting 2018 biomass-based diesel volumes in the proposed rule, EPA overstates the number of RINs separated from exported volumes of biomass-based diesel in prior years, producing a systematic underestimate of available volumes for 2018. EPA should correct such errors in determining required biomass-based diesel volumes for 2018, which will ultimately be relevant to EPA's later decision on the proper level of advanced biofuel volumes for 2018.

EPA overestimates export of biomass-based diesel by relying on Energy Information Administration data rather than EPA Moderated Transaction System data. For instance, the agency inaccurately states that "[i]n 2012 the available BBD RINs were slightly less than the BBD standard."[53] In fact, all available evidence suggests that available BBD RINs were more than sufficient to meet the 2012 RVO and, indeed, that they contributed to the creation of a carryover RIN bank for 2013.[54]

In Table IV.B.1-1, EPA estimates that there were 1,465 million 2012 BBD RINs available, which is less than the projected 1,500 million needed to meet the 2012 RVO. But EPA also estimates in the same table that 183 million RINs were or eventually would be separated from exported volumes of biodiesel in 2012, subtracting this amount from the estimate of available RINs (which otherwise would be about 1,648 million RINs, rather than 1,465 million RINs). There is no reason to make such an estimate. The 2012 compliance year is complete, and all RINs

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[51] *See* 706 F.3d at 476.

[52] 42 U.S.C. § 7545(o)(2)(B)(ii).

[53] Proposed Rule at 34808.

[54] We elsewhere note our view that building or maintaining such a RIN bank is not a proper and lawful purpose under the RFS statute and program.

separated from biodiesel in 2012 were required to be surrendered by that year's compliance deadline in February 2013. The EPA Moderated Transaction System indicates that 69.4 million RINs were separated from exported biodiesel in 2012.[55] Moreover, EPA data indicates that the carryforward deficit for the 2012 biomass-based diesel obligations was only 13.4 million RINs.[56]

In its consideration of its proposed applicable biodiesel volume for 2018, EPA gives significant weight to what happened in 2012. It is therefore significant that EPA is demonstrably incorrect in enumerating various "factors beyond the RFS standards" as impacting BBD production in 2012.[57] The RFS standards for 2012, the existence of carryover RINs, and other compliance flexibilities fully account for 2012 production of biomass-based diesel in that year. EPA has every reason "to believe that the advanced biofuel and total renewable fuel standards provide a strong incentive for increased BBD volume"[58] and should set the 2018 volumes accordingly.

EPA must correct its assessment of past implementation of the program to correctly estimate future production volumes.

IV. In exercising its cellulosic waiver authority (as to cellulosic volumes, advanced volumes, and total volumes), EPA should set renewable fuel volume obligations as close to statutory numbers as is practicable.

BIO objects to the proposed rule to the extent that it suggests that EPA may not be proposing numbers that truly reflect minimum reductions in volumes. As EPA points out in the proposed rule, until the final 2014-2016 RFS Rule, EPA interpreted its authority to reduce volumes of advanced and total renewable biofuel RVOs under its cellulosic waiver authority by focusing on the agency's ability under the law—based on the likely availability of advanced and total renewable fuels to obligated parties—to maintain the RFS statutory RVOs for those fuels in spite of any annual reductions to the cellulosic biofuel RVOs. For instance, EPA opted to maintain the 2012 and 2013 RVOs for advanced and total renewable fuels because it determined that there would be sufficient production volumes of qualifying advanced biofuels in

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[55] Export of Renewable Fuel as per 40 CFR 80.1429(b)(3), *available at* https://www.epa.gov/fuels-registration-reporting-and-compliance-help/2012-renewable-fuel-standard-data.

[56] Letter from Byron J. Bunker to Paul A. Winters, BIO, "Re: FOIA Request EPA-HQ-2015-002570" (June 22, 2016).

[57] *See* Proposed Rule at 34808 (citing "2012 drought, expiration of the biodiesel tax credit, opportunities for increased ethanol blending as E10" as factors affecting BBD production in 2012).

[58] *Id.*

those years to make up for the shortfall of cellulosic biofuels in the same years.[59] In its rulemakings for 2012 and 2013, EPA correctly placed a premium on following Congress's mandate to implement the RFS in a way to maintain, as much as is possible, the statutory volumes set by Congress.[60] EPA should do likewise in setting 2017 volume requirements.

EPA has "considerable discretion" in exercising EPA's cellulosic waiver authority, which is broader than EPA's general waiver authority.[61] At the same time, EPA's discretion in using the authority is not unbounded. In other words, EPA's discretion is constrained to a significant extent. For example, as EPA indicates (specifically referring to the total renewable fuel volume requirement, and EPA's exercise of authority under **both** the cellulosic waiver provision and the general waiver provision), reductions in any specific volume requirement should be made "**only** to the extent necessary" to "reflect[] the maximum supply that can reasonably be expected."[62] To be sure, the passage here quoted improperly emphasizes the role of consumption in determining adequate supply, particularly with regard to the general waiver provision. But the broader point is sound: EPA is to aim at the maximum numbers feasible, to avoid unnecessary frustration of the purposes expressed in the specific volume requirements that Congress enacted into law. Decisions about reductions must be made to comport with the statute's overall purposes, which are technology-forcing and forward-looking, and are not meant to perpetuate existing constraints, real or imagined, related to renewable fuels.

In other words, with regard to EPA's exercise of its cellulosic waiver authority, we believe that EPA should "set the total volume requirement at" **no less than** "the **maximum** reasonably achievable level that will drive significant growth in renewable fuel use beyond what would occur in the absence of such a requirement, as Congress intended."[63] We respectfully submit that EPA did not succeed in

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[59] *See* Regulation of Fuels and Fuel Additives: 2012 Renewable Fuel Standards, 77 Fed. Reg. 1320, 1331-32 (Jan. 9, 2012) ("2012 RFS Final Rule"), *available at* http://www.gpo.gov/fdsys/pkg/FR-2012-01-09/pdf/2011-33451.pdf; *see also* Regulation of Fuels and Fuel Additives: 2013 Renewable Fuel Standards, 78 Fed. Reg. 49794, 49824 (Aug. 15, 2013) ("2013 RFS Final Rule"), *available at* http://www.gpo.gov/fdsys/pkg/FR-2013-08-15/pdf/2013-19557.pdf.

[60] 2012 RFS Final Rule at 1331 ("[EPA] believe[s] that it would not be consistent with the energy security and greenhouse gas reduction goals of the [RFS] statute to reduce the applicable volumes of advanced biofuels set forth in the statute if there are sufficient volumes of advanced biofuels available, even if those volumes do not include the amount of cellulosic biofuel that Congress may have desired").

[61] 2014-2016 RFS Rule at 77426 n.15; *see also* 2014-2016 RFS Proposal at 33104 n.12, 33117 n.46.

[62] Proposed Rule at 34781-82 (emphasis added).

[63] *Id.* at 34785 (emphasis added). Of course, we do not agree with EPA's interpretation of its general waiver authority in this regard.

achieving such levels for the years 2014, 2015, and 2016.[64] We also submit, again with respect, that EPA can succeed in achieving maximum attainable levels for 2017 only by issuing significantly higher volume requirements for that year than are set forth in the proposed rule.[65]

EPA has not reasonably and persuasively demonstrated that it is necessary to reduce the advanced renewable fuel requirements by the entire proposed five billion gallons. As explained above, there will be additional qualifying advanced biofuels and carryover RINs in 2017 to provide several hundred million additional gallons in satisfaction of the total renewable fuel requirement. EPA would thus be acting improperly if it were to rely on its cellulosic waiver authority provision to impose the full extent of its proposed reductions to 2017 RVOs for advanced biofuel and total renewable fuel volumes. It would be improper for EPA to make any unnecessary reductions to these 2017 RVOs.

As noted above, we agree with EPA that reductions should be made "only to the extent necessary" to address any real inadequacy in supply that exists, and no further.[66] Any other approach would violate the statute. As EPA acknowledges, its exercise of its waiver authorities must be consistent with the RFS statute to "spur growth in renewable fuel use."[67] EPA and its exercise of its waiver authorities may not work against that objective. As EPA has said (particularly referring to advanced biofuel volumes), maintaining statutory renewable fuel volumes "will result in reduced GHG emissions from the transportation sector and could also contribute to energy security objectives. We do not believe it is appropriate to forgo such benefits when they are **physically achievable**."[68] As EPA has also said, "estimating the maximum volumes that can be achieved from a responsive market"

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[64] *See, e.g., id.* at 34795 ("During these years (2014–2015) we believe that the supply of biodiesel likely grew at a slower rate than the progress being made to expand the potential supply of biodiesel and renewable diesel used as transportation fuel in the United States due to the absence of standards in these years.").

[65] See Jordan Godwin, "Seven things to know about the US EPA's RFS proposals," The Barrel/Platts (May 31, 2016) (http://blogs.platts.com/2016/05/31/seven-things-us-epa-rfs-proposals/) (EPA's "proposed targets" are "seemingly *easily* reachable") (emphasis added).

[66] Proposed Rule at 34781, 34788.

[67] *Id*. at 34782; *see id.* at 34784.

[68] EPA, Regulation of Fuels and Fuel Additives: 2013 Renewable Fuel Standards, 78 Fed. Reg. 9281, 9300 (Feb. 7, 2013) (proposed rule), *available at* http://www.gpo.gov/fdsys/pkg/FR-2013-02-07/pdf/2013-02794.pdf (emphasis added); *see also* 2013 RFS Final Rule at 49794, 49797 (maintaining statutory advanced biofuel and total renewable fuel volumes for 2013).

is "implicitly required by the statute."[69] EPA must set numbers with the overriding goal of encouraging the expansion of markets for biofuels and new biofuels technology, far beyond previous levels, including the so-called blendwall.[70]

For this reason, BIO is concerned by statements in the proposed rule that could suggest that EPA's proposed numbers do not reflect minimum reductions in volumes. For example, EPA states that in exercising its cellulosic waiver authority as to advanced biofuels, "we are not required, and do not intend, to necessarily identify the most likely 'maximum' volumes of advanced biofuel that can be used in 2017."[71] EPA goes on to suggest that "we can identify reasonably attainable volumes in a manner that is similar to, but may be less exacting than, a determination of inadequate domestic supply using the general waiver authority."[72] As BIO has noted, EPA's conception of "inadequate domestic supply using the general waiver authority" is vague and malleable enough; a standard that is "less exacting" than this conception could be even less predictable.[73] Moreover, we are

[69] 2014-2016 RFS Proposal at 33117; *see also* 2014-2016 RFS Rule at 77475 ("The volumes of total renewable fuel that we are establishing for 2016 reflect our assessment of the maximum volumes that can reasonably be achieved, taking into account both the constraints on supply discussed previously and our judgment regarding the ability of the standards we set to result in marketplace changes in 2016.").

[70] As EPA has said, in setting fuel volumes, "the so-called blendwall 'is not a firm barrier that cannot or should not be crossed.'" Proposed Rule at 34788. The statute requires surmounting this paper barrier, and there is no reason to believe that it cannot be surmounted in 2017 or in other years.

[71] *Id.* at 34797.

[72] *Id.* EPA appears to have made similar statements in the 2014-2016 RFS Rule, 80 Fed. Reg. at 77476 n.129 (*see also* BIO Comments on Proposed 2014-2016 RVOs, at 28). Nonetheless, the new proposed rule appears to represent a potential shift in emphasis in this regard. *Compare* Response to Comments for 2014-2016 RFS Rule, at 281-82 ("One stakeholder took issue with our intentions to be aggressive in increasing the volume requirements in 2016 and beyond, saying that doing so would not be consistent with the statutory structure. . . . As to use of the words 'neutral' versus 'aggressive,' we note that the intent of the statute is to increase the use of renewable fuels, *and* ***even when we make use of the available waiver authorities to reduce the volumes below the statutory targets we must reduce them only to the degree necessary to fulfill our responsibilities under those waiver authorities*** taking into consideration the various constraints.") (emphasis added).

[73] Moreover, we are concerned that EPA seems to be suggesting the use of a different and less predictable standard for applying the cellulosic waiver provision in determining advanced biofuel volumes than the standard that would apply, under the same provision, in determining total renewable fuel volumes. *Compare* Proposed Rule at 34781-82 (indicating, with reference to total renewable fuel volumes and EPA's exercise of authority under both cellulosic waiver and general waiver provisions, that reductions should be made "only to the extent necessary" to "reflect[] the maximum supply that can reasonably be expected"). We

concerned that if EPA fails to aggressively and appropriately seek volume increases that drive the statutory purpose, the likely result will be a new administrative decision that is inconsistent with EPA's acknowledged understanding of the purpose of the program and statute and will be vulnerable to invalidation in court, quite apart from the vulnerabilities inherent in EPA's reliance on a broad conception of its general waiver authority.[74]

If anything, the standard for determining waivers based on the cellulosic waiver authority should be easier to administer than the unpredictable (and, as we elsewhere explain, unlawful) standard that EPA currently seeks to use to decide whether and to what extent to invoke the general waiver authority. EPA should hold to administrable, predictable rules in this area. Physically achievable advanced biofuel, cellulosic biofuel, and total renewable volumes are the minimum volumes that must be required when the cellulosic waiver authority is used. Failing to require maximum volumes for 2017, or any other year, would not be consistent with the energy security and greenhouse gas reduction goals of the RFS statute.

Moreover, EPA should not reduce volumes based on factors that represent the intransigence of obligated parties who have known about and have had the capability to prepare for steps and investments that would be necessary to fulfill their increasing RFS volume obligations since enactment of the RFS2 program in 2007. "Obligated parties ha[ve] long been aware of the applicable volumes prescribed in the statute."[75]

As noted above, the D.C. Circuit's decision in *API v. EPA* provides support for the conclusion that reductions in any specific volume requirement should be made only to the extent necessary to remove an actual inadequacy in supply. In the *API* case, the court held that EPA exceeded the scope of its cellulosic waiver authority when it failed to reduce the 2012 RFS cellulosic biofuel RVOs to the level of actual expected production.[76] EPA had erred by "deliberately indulging a greater risk of overshooting than undershooting" in order to force the development and production of cellulosic biofuel technology.[77] In other words, under its cellulosic waiver authority, EPA must

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respectfully suggest that such a discrepancy would seem to be problematic and, indeed, arbitrary.

[74] It might be thought that the proposed rule represents some effort by EPA to "walk back" or oversimplify some of the franker acknowledgments EPA made regarding the statute's purposes in EPA's rulemaking for 2014, 2015, and 2016 RVOs or in past rulemakings. As we showed in past comments, the purposes of the statute and program cannot be altered by individual obligated parties' decisions to refrain from taking the steps needed to use the volumes. If EPA now seeks to walk back its settled understanding of the statutory purposes, EPA has not presented a rationale for doing so, much less a reasoned explanation.

[75] *Monroe Energy, LLC v. EPA*, 750 F.3d 909, 920 (D.C. Cir. 2014).

[76] *See* 706 F.3d at 479-81.

"take a neutral aim at accuracy" when setting the annual RFS cellulosic RVOs.[78] Similarly, in this situation, EPA may not deliberately underestimate projections or estimates, for whatever reason. Thus EPA may not act arbitrarily or capriciously by choosing an interpretation of the available data on the supply of various categories of renewable fuels that is not fair and accurate.

Finally, to the extent that EPA has concerns about impacts on obligated parties, the RFS statute and regulations themselves contain a number of inherent flexibilities that can be used to mitigate or reduce burdens on obligated parties, such as the use of carryover RINs and the option to carry compliance deficits forward. In addition, EPA may consider extending relevant compliance deadlines (as it has done in the past), as a preferable alternative to the more extreme and improper course of unnecessarily reducing volumes below statutory requirements. In a specific factual context, the D.C. Circuit upheld EPA's extension of a compliance deadline as a "way to balance obligated parties' interest in regulatory certainty with EPA's statutory obligation to ensure the renewable fuel volumes are annually met."[79] At the same time, EPA must avoid unnecessarily extending compliance deadlines, which can further destabilize the program, and which could in some circumstances exceed EPA's legal authority. EPA must also take care to avoid approving compliance deadline extensions that adversely affect the value of RINs, undermining the incentives that are essential to the success of the program as Congress designed it.

V. EPA should include carryover RINs in its consideration of the supply of fuels that could satisfy 2017 RVO requirements.

EPA should not exclude carryover RINs from its consideration of the supply of fuels that are available to satisfy 2017 RVO requirements. Doing so would be in direct conflict with the goals of the RFS program, and would be arbitrary and capricious. EPA has no authority to attempt to build a bank of carryover RINs, regardless of whether it might be thought that doing so is important or helpful. The notion of an ongoing bank of carryover RINs is inconsistent with the text and purpose of the relevant statutory provision. Moreover, we respectfully submit that building and preserving a RIN bank as a justification for **waiving** statutory volume requirements is particularly perverse and unlawful. Building a bank of carryover RINs directly harms biofuel producers and obligated parties who have invested in biofuel production and distribution capacity. By cheapening the value and utility of RINs, bank-building actions severely harm some parties, even while the agency is demonstrably unable to guarantee a benefit to others.

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[77] *Id*. at 479.

[78] *Id*. at 476.

[79] 750 F.3d at 920.

The proposed rule seems to suggest that EPA enjoys complete discretion to create, maintain, and even augment a substantial bank of carryover RINs.[80] However, the creation, maintenance, and enhancement of such a bank would be inconsistent with the statute and its purposes in a number of respects. For example, when Congress directed EPA to create a credit program under the RFS for refiners, blenders and importers who blend more renewable fuel than the required volume, Congress directed the agency to ensure that credits remain valid for "12 months as of the date of generation."[81] Of course, Congress did not specify that the credits could remain indefinitely valid, or indefinitely unused. Yet intentionally creating a "RIN bank" would achieve that effect, thus circumventing the scheme that Congress created.

The proposed rule's theory regarding a RIN bank clashes with the statutory scheme in another basic respect. To ignore available RIN credits in determining the supply of available fuels is fundamentally to diminish the value and effectiveness of RINs, thereby frustrating the statutory purpose of spurring transformation in the fuels market and driving innovation. Elsewhere, EPA has recognized the value of RINs to E85 retailers, who can use them to recoup their investments in distribution infrastructure.[82] But the proposed rule's calculation of fuel volumes – both in relying as it does on EPA's waiver authorities, and in ignoring the availability of RIN credits to meet volume requirements – would undermine this purpose. A large bank of carryover RINs diminishes the price of individual RINs, and thereby reduces the value of investing in the production, distribution, and retailing infrastructure needed to make the statutory program succeed for the long term.

Moreover, and ironically, the proposed rule's theory of a RIN bank would be likely to result in (and, in any event, would unnecessarily and unjustifiably risk) the expiration of a substantial number of unused RINs. If the proposed RVOs are made

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[80] *See, e.g.*, Proposed Rule at 34789.

[81] 42 U.S.C. § 7545(o)(5)(C).

[82] Dallas Burkholder, "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effects," EPA Office of Transportation and Air Quality (May 14, 2015); *see also* 2014-2016 RFS Rule at 77458-59 ("The RIN system should . . . incentivize the development of the renewable fuel distribution infrastructure by helping to decrease the net cost of renewable fuels. . . . By increasing the potential profitability of blending renewable fuels . . ., higher RIN prices can incentivize the build out of the infrastructure necessary to blend and distribute renewable fuel blends as parties seek to enter or expand their position within this market."). In places in the proposed rule, EPA seems to misunderstand the value of RIN prices in spurring such investment, e.g. by stating that retail station owners and wholesalers have a "propensity . . . to retain a substantial portion of the RIN value," which "substantially reduces the effectiveness of this aspect [i.e. price competitiveness for E85] of the RIN mechanism." Proposed Rule at 34790. But "retain[ing] a substantial portion of the RIN value" allows retailers and wholesalers to recoup the costs of installing E85 infrastructure, and of course generally creates market incentives to produce and use E85 – which serves the goals of the statute.

final, the resulting volume obligations would be so low as to make it unlikely that all available RINs would actually be used. RINs that expire unused are of zero value to renewable fuel producers, E85 retailers, or obligated parties who have invested in renewable fuel production and distribution infrastructure in reliance on and in furtherance of the statutory program. It would be arbitrary and capricious – and irreconcilable with the purposes of the statute and the program – for EPA to create a system that encourages **any** RINs to simply expire unused. The destruction of RIN value by setting volume obligations that result in expiration of unused RINs does not serve any legitimate purpose and violates Congress's directive to the agency to increase renewable fuel use while making RIN credits available "for the purpose of complying with" the renewable volume obligations.[83]

In addition, EPA's recent experience with carryover RINs contradicts the proposed rule's position that a RIN bank is needed to facilitate extra compliance flexibility for obligated parties. In 2010 and 2011, obligated parties allowed nearly 925 million RINs to expire unused. In 2010, the same obligated parties carried forward substantial compliance deficits (over 31,000 RINs associated with cellulosic biofuel; over 227 million RINs associated with biodiesel; over 229 million RINs associated with advanced biofuel; and over 163 million RINs associated with total renewable fuel requirements). But as EPA has recently informed us, obligated parties have made relatively little use of the deficit carryforward provision of the program since 2010.[84] EPA has failed to substantiate or demonstrate why obligated parties need a bank of carryover RINs to ensure additional compliance flexibility beyond what is provided in the statute and is already available.

Yet another problem with the concept of a RIN bank reflected in the proposed rule is that EPA has not explained how large the RIN bank would need to be in order to provide an extra measure of flexibility to obligated parties that would be sufficient from EPA's perspective. EPA estimates the current bank of carryover RINs to be 1.72 billion.[85] EPA has not provided any persuasive rationale why this specific number should be considered sacred, or any more desirable than any other number of carryover RINs. Even if "holding back" some number of carryover RINs from

[83] 42 U.S.C. § 7545(o)(5)(B).

[84] Letter from Byron J. Bunker to Paul A. Winters, BIO, "Re: FOIA Request EPA-HQ-2015-002570" (June 22, 2016) (for 2011, showing compliance deficits of over 39 million RINs associated with biodiesel, over 35 million RINs associated with advanced biofuel, and over 66 million RINs associated with total renewable fuel requirements (there was no cellulosic biofuel standard for 2011 and 2012, due to legal challenges); for 2012, showing compliance deficits of over 13 million RINs associated with biodiesel, over 18 million RINs associated with advanced biofuel, and over 72 million RINs associated with total renewable fuel requirements; for 2013, showing compliance deficits of 26 RINs associated with cellulosic biofuel, over 6 million RINs associated with biodiesel, over 17 million RINs associated with advanced biofuel, and over 57 million RINs associated with total renewable fuel requirements).

[85] Proposed Rule at 34789.

consideration were permissible and reasonable (and it is not), it would be unreasonable for EPA to completely exclude consideration of **all** carryover RINs in assessing available supply of renewable fuel for purposes of satisfaction of annual volume obligations for 2014, 2015, and 2016.

Indeed, EPA EMTS data suggest that there will be another major surplus of RINs generated in 2016, therefore adding significantly to the RIN bank. The bank could be augmented by "nearly a billion more carryover RINs heading into 2017."[86] Even if EPA holds to its previously expressed position on carryover RINs (with which we respectfully disagree, as noted here), EPA must take account of the EMTS data in setting volume requirements, and must avoid unnecessary increases in the RIN bank, given the negative policy consequences for the program of doing so. EPA has no good reason for **increasing** the bank of carryover RINs in 2017.

In sum, EPA has not justified proposing to exclude carryover RINs in its consideration of supply available to meet volume obligations. To comply with statutory requirements, and to avoid impeding the statute's purposes, EPA must take into consideration the use of all available carryover RINs to meet volume obligations (or, in the alternative, EPA must **at least** take into account the use of a substantial number of such RINs). It follows that the advanced biofuel and total renewable fuel RVOs for 2017 should be set at considerably higher levels than the 4.6-billion-gallon and 19.6-billion-gallon figures explained in Part III.A above, which were calculated without taking into account the availability of carryover RIN credits.

VI. EPA must make process improvements for RFS pathway approvals – not only to clear backlogs of pending approval petitions, but to speed new approval decisions.

To be blunt, EPA is simply too slow in making decisions on RFS pathway approvals, with damaging results. In the near term, EPA's delays are contributing to EPA's setting annual fuel volume requirements that fail to account for significant quantities of potentially qualifying renewable fuels. In the longer term, EPA's delays

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[86] Jordan Godwin, "Seven things to know about the US EPA's RFS proposals," The Barrel/Platts (May 31, 2016) (http://blogs.platts.com/2016/05/31/seven-things-us-epa-rfs-proposals/). "Based on the EPA's EMTS data provided on RIN generation through the first four months of 2016, we're on a really strong pace. Taking into account the last five years of RIN generation and what months provided the strongest cut of the total (i.e., 7.58% in February and 8.8% in December for D6 compliance on the five-year averages), we're currently on pace to exceed the mandate by 965 million RINs. The numbers suggest corn-based ethanol (D6) RINs will overshoot its portion by 452 million RINs and biomass-based diesel (D4) RINs will go 1.405 billion RINs over its mandate, thanks in large part to the $1/gal blenders tax credit. When you take away the projected advanced biofuel (D5) deficit of 830 million and the cellulosic biofuel (D3) shortfall of 62 million RINs, you're left with nearly a billion more carryover RINs heading into 2017." *Id.*

on pathway approvals are impeding the success of the RFS program.[87] Perversely, this is particularly the case for producers of advanced and cellulosic biofuels, which have lower greenhouse gas emissions, as is shown in Figure 1 below.

Figure 1: Average Time for EPA to Address New RFS Biofuel Pathways Submitted between April 2010 and June 2016

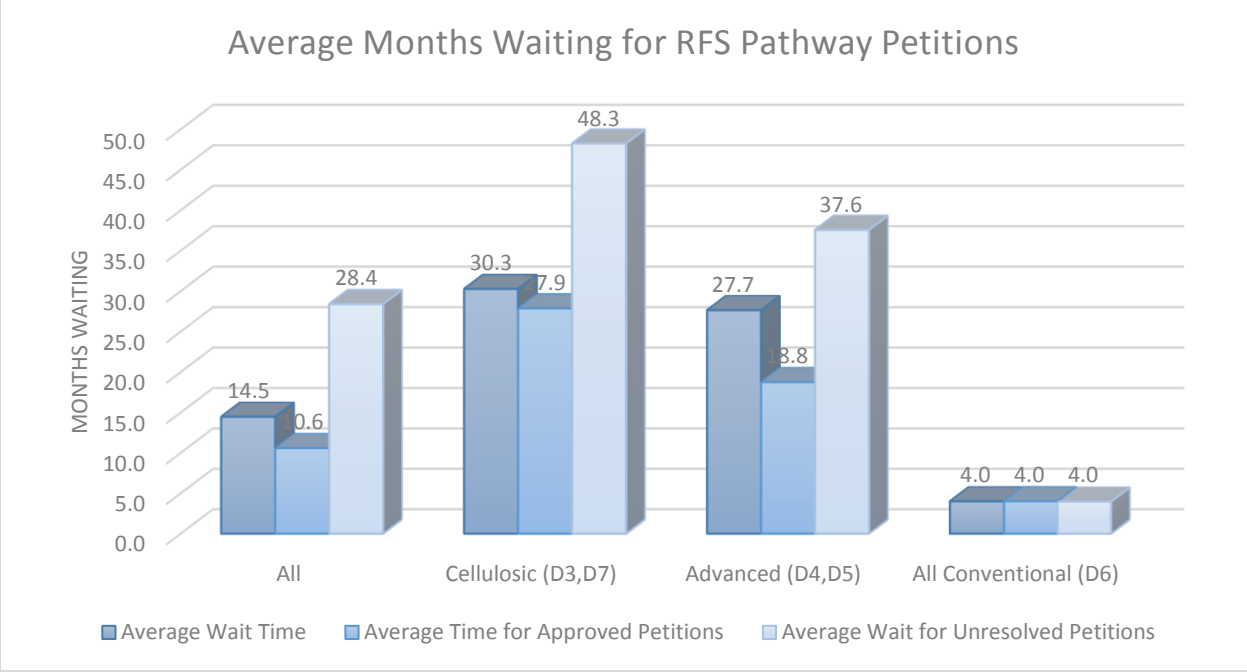

Figure 1 makes clear that average wait times for all petitions can be misleading: in particular, the average numbers mask the delays in approval decisions on RFS pathways for cellulosic and advanced biofuels. Those delays are counterbalanced by EPA's relative success in expeditiously approving a subset of conventional biofuel petitions. That success should be acknowledged; if anything, it should spur EPA to similar process improvement achievements with regard to review and approval of petitions submitted for cellulosic and advanced biofuel producers.

In November 2014, EPA implemented the Efficient Producer process to evaluate the lifecycle greenhouse gas emission scores for conventional biofuel producers who expanded production beyond their grandfathered capacity. To-date, EPA has approved 54 Efficient Producer petitions – representing 25 percent of all U.S.

[87] As we explain in Part III.B above, any proposal to ignore likely pathway approvals across the board in calculating cellulosic volumes is improper even assuming no change to the current pattern of delays for many pathway petitions. Nonetheless, as we explain here, that pattern can and should be changed. Speeding up the approval pipeline is desirable and necessary in its own right, and could also significantly mitigate (albeit without completely and adequately correcting) the problem described in Part III.B.

ethanol biorefineries. These petitions have been approved, on average, within **3 months** of their filing.

Because Efficient Producer petitions, which represent more than 45 percent of all pathway petitions filed, have been resolved quickly, EPA has reduced the average wait time for all petitions to slightly more than 14 months. For all conventional pathway petitions, the wait time has been reduced to just **4 months** (measured from the date a petition was first filed). Nonetheless, for those conventional biofuel pathway petitions outside the efficient producer process, the wait remains longer – **more than 15 months**. Five ethanol producers who originally filed regular pathway petitions in 2013 and 2014 and waited more than a year each eventually withdrew them and filed Efficient Producer petitions, receiving approvals within months.

By comparison, the picture is quite dire for aspiring advanced and cellulosic biofuel producers. The wait times for such producers continue to climb. There are currently 28 companies awaiting final approval of pathway petitions, 19 of which are potential advanced or cellulosic producers. For 6 of these companies, EPA has proposed a rule and solicited public comment (one company is a potential conventional biofuel producer, 5 are potential advanced producers). The comment periods on these companies' petitions are all closed.

Cellulosic biofuel companies have waited on average **more than 30 months** for EPA to address petitions. For the two potential cellulosic biofuel producers whose petitions are still pending, the wait has reached **4 years (48.3 months)**. For 12 producers whose petitions were approved, the wait time was **two-and-a-half years (27.9 months)**. However, among those 12 approved producers, 6 have abandoned plans to produce biofuels. Three additional companies simply withdrew their petitions.

Advanced biofuel companies have waited on average **more than two years (27.7 months)** for EPA to address petitions. For the 17 potential advanced biofuel producers whose petitions are pending (including the 5 awaiting final approval of proposed rules), the wait has topped **3 years (36.9 months)**. Three additional potential biofuel producers withdrew their petitions and abandoned plans to produce biofuel.

These facts strongly suggest that EPA's delays on pathway approvals are having a substantial negative effect on the progress of the RFS program. A wait time of three or four months can often be manageable for fuel developers and investors, particularly if the delay is relatively predictable. By contrast, a wait time of multiple years can be fatal for a commercialization plan. Petitioners' lengthy waits for approval of new pathways discourage investment in commercial production of advanced and cellulosic biofuels. Without a pathway to the fuel market, companies find it difficult to attract investment necessary to initiate, continue, and complete the construction and startup of new facilities. If EPA does not solve this problem as soon as possible, the path to expanded advanced biofuel volumes and cellulosic volumes could be choked.

Relatedly, as EPA has acknowledged, "the development and use of new, high-yielding feedstocks, such as algal oils or alternative oilseed crops," could result in "[l]arge increases in the available supply of biodiesel and renewable diesel in future years."[88] We urge EPA to account appropriately for -- and adequately incentivize -- technological developments relating to the use of such feedstocks in fuel production.

We note that in connection with issuing the 2014-2016 RFS Rule in late 2015, EPA promised that it would "continue to work with renewable fuel producers to improve the completeness and accuracy of registration submissions by providing more thorough guidance, planning future enhancements to the CDX system, and proposing regulatory amendments to improve the registration and review process."[89] We urge EPA to take aggressive action on these and other fronts to expedite pathway reviews and approvals.

In sum, EPA should take immediate steps to expedite the pathway review and approval process, which will increase the available supply of advanced and cellulosic biofuels to meet the RVOs. EPA should devote new resources to clear its existing backlog, and should also make improvements to ensure that new pathway petitions are processed expeditiously on predictable timelines.

VII. EPA's recent actions implementing the RFS program have had serious negative impacts on the biofuels industry, and on the goals that Congress directed EPA to achieve.

EPA's proposals and actions since late 2013 have undermined the goals as well as the requirements of the RFS statute. We describe these effects not only to explain our view of why the program is where it is, but to further elaborate on the likely consequences and pitfalls of proceeding along the same path for 2017 and later years.

A. Overview: RFS uncertainty has caused another year of chilled investment in advanced biofuels.

EPA recognizes that its delays in rulemaking since 2013 have undercut investment in advanced biofuels. The agency fails, however, to recognize that the substantive approach to the program that it has taken since the 2014 RFS Proposal has undercut investment in such fuels. The agency has taken a path that forces conventional and advanced biofuel producers to compete for limited shares of the transportation fuel market, discouraging investment in new technology. Further, the agency has effectively shifted the responsibility and costs of building biofuel distribution infrastructure to biofuel developers, further delaying investments in

[88] Proposed Rule at 34791.

[89] Response to Comments for 2014-2016 RFS Rule, at 843.

added advanced capacity that are needed to make the program work. Moreover, EPA is using past production figures to project future market space for renewable fuels, a method proposed by the oil refining industry specifically to slow growth in renewable fuel production.

Many advanced biofuel developers also invest in conventional biofuels or intend to co-locate production with or license technology to conventional biofuels producers, strategies that create economies of scale in feedstock and production infrastructure. EPA's new methodology forces these developers to choose between protecting sunk capital in conventional biofuels and risking new capital on advanced biofuels. Data on investment in the biofuel sector bear out that EPA's methodology has forced producers to consolidate investment in conventional biofuel production capacity and distribution infrastructure, while sacrificing investment in advanced biofuels.

In 2009, Bio Economic Research Associates ("bio-era"), in a report commissioned by BIO, modeled the investment necessary to build an advanced biofuel industry from the ground up to meet the goals of the RFS.[90] As explained below, BIO now estimates that EPA's rulemaking delays, unwarranted expansion of its waiver authorities, and methodology for setting annual RVOs have led to a shortfall of roughly $22.4 billion in investment in advanced biofuels.

EPA can correct course in the 2017 rule by reversing its use of the general waiver authority to reduce fuel volumes, raising advanced biofuel volumes sufficiently to obviate competition among biofuel developers, and carrying out its statutory responsibility to ensure that U.S. transportation fuel market is open to every gallon of renewable fuel that can be produced, up to the statutorily set volumes.

B. EPA has ignored the impact of its rulemakings on investment.

EPA does not dispute that its delays in annual rulemaking failed to drive increased use of advanced biofuels in 2014 and 2015. As the agency stated in the 2014-2016 RFS Rule, "[t]he final 2014 standards are based on actual production levels in 2014, possibly suggesting that the 2014 standards we are finalizing are what would have happened in the marketplace absent a rulemaking."[91] And further, "[t]he final standards for 2015 are being set late in the 2015 calendar year, so it is not clear how much extra renewable fuels (and thus costs) the standards are requiring above what the marketplace would have supplied absent them."[92] Allowing the marketplace, which continues to be dominated by oil companies and obligated parties, to set required volumes of renewable fuel, without taking into account the

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[90] Bio Economic Research Associates, U.S. Economic Impact of Advanced Biofuels Production: Perspectives to 2030 (Feb. 2009), *available at* https://www.bio.org/sites/default/files/EconomicImpactAdvancedBiofuels.pdf.

[91] 2014-2016 RFS Rule at 77487.

[92] *Id.*

statutory requirements and goals, is inconsistent by definition with the statute and its purposes.

EPA clearly understands the need for stability in the RFS rulemaking process in order to drive investment. In its Response to Comments on the 2014-2016 RFS Proposal, EPA acknowledged that "[i]n the longer term, sustained increases in volume requirements are necessary to provide the certainty of continued growth in a future market that is needed by investors; the development of new technology won't occur unless there is clear market potential, and it requires multiple years to build new production, distribution, and consumption capacity and to develop the marketing effectiveness among consumers that is needed."[93] And in the 2017 proposed rule, EPA states: "Volume requirements over the longer term that are issued in a timely manner and which provide the certainty of a guaranteed and growing future market are necessary for the industry to have the incentive to invest in the development of new technology and expanded infrastructure for production, distribution, and dispensing capacity."[94]

Despite this understanding, EPA disputes that its rulemakings are primarily responsible for a shortfall in investment in advanced biofuels, stating that EPA "does not believe these claims are accurate or supported by the data."[95]

C. EPA is directly responsible for lost investment.

EPA does not deny that its delays in establishing the 2013, 2014 and 2015 annual rules created untenable uncertainty for advanced biofuel producers and impacted investment.[96] And EPA acknowledges that its final 2016 RVO, while issued by the statutory and Court ordered deadline of November 30, 2015, was nevertheless impacted by its previous delays.[97] Investment in advanced biofuel continues to fall short of what is needed, and EPA's departure from the RFS statute and its unnecessary delays in implementing RFS requirements are responsible for that ongoing shortfall.

The agency's proposed rule for 2017 continues to create unwarranted competition between advanced and conventional biofuel producers for a limited share of the

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[93] Response to Comments for 2014-2016 RFS Rule, at 150.

[94] Proposed Rule at 34784.

[95] Response to Comments for 2014-2016 RFS Rule, at 687.

[96] *See, e.g.*, 2014-2016 RFS Proposal at 33120; 2014-2016 RFS Rule at 77442 ("agree[ing] that the delay in setting standards has created some uncertainty and could have led to a slowdown in investment in both production capacity and infrastructure for blending and dispensing renewable transportation fuels").

[97] *See* Proposed Rule at 34798 ("The 2016 standards were designed to reflect the fact that the 2014 and 2015 standards had not been set by the statutory deadlines.").

transportation fuel market. As the agency states, "Our analytical approach is to first ascertain the maximum reasonably achievable volumes of all types of renewable fuel. Having done so, we next determine the extent to which a portion of those fuels should be required to be advanced."[98] As noted above, many of the first cellulosic ethanol producers have made significant investments in conventional biofuels or hope to license their technology to conventional biofuel producers as a bolt-on technology or co-locate facilities to create economies of scale. The agency's methodology discourages conventional biofuel producers from investing in advanced and cellulosic biofuel production or allowing co-location, since any market share to be gained from the investment would come at the cost of conventional production. The agency has created a strong incentive for biofuel producers to protect their significant investments in and market share for conventional biofuel and to forego (even discourage) investment in advanced biofuel. This is perverse, and inconsistent with a central purpose of the statute. Higher volume requirements under the RFS would incentivize investment in advanced biofuels, by ensuring that the full 15 billion gallons of conventional biofuels per year contemplated under the RFS statutory volume requirements for the calendar years 2015 through 2022 could be provided by conventional biofuel producers.

Producers who focus exclusively on advanced biofuel production and have no incentive to protect conventional biofuel investments must also be discouraged by EPA's changed methodology. Added to the significant risk of investment in new advanced biofuel technologies is the uncertainty created by EPA's unnecessary move to create competition within the advanced biofuel category between biomass-based diesel producers and other advanced biofuel producers.[99] Developers of new advanced biofuel technologies must now compete for market space with more established biomass-based diesel producers.

Additionally, EPA has relieved obligated parties of any responsibility to invest in infrastructure for distribution of biofuels and has placed that responsibility squarely on the shoulders of biofuel producers, adding to the costs of developing and producing biofuels. EPA states that it "do[es] not believe the statute should be interpreted to require that refiners and importers change the fundamental nature of their businesses so as to comply with RFS requirements."[100] The fundamental nature of obligated parties' businesses is to sell petroleum. EPA clearly understands the costs of this shift, as it notes that "[f]or the [biomass-based diesel] market to continue to expand, it will likely require greater investment per volume of biodiesel supplied, 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."[101] Necessary

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[98] *Id.* at 34785.

[99] *Id.* at 34810, 34812 & n.84.

[100] Response to Comments for 2014-2016 RFS Rule, at 351.

investments in distribution infrastructure by conventional biofuel and biodiesel producers are now competing with investments in additional advanced biofuel capacity and new technologies.

Lastly, EPA has created new uncertainty for advanced biofuel producers by setting advanced biofuel volume requirements in the 2014-2016 RFS Rule that (if that rule is not invalidated in pending litigation[102]) would seem to trigger, as to advanced biofuels, the initiation of the reset (or "off-ramp") process described in Clean Air Act section 211(o)(7)(F) (42 U.S.C. § 7545(o)(7)(F)). It is particularly distressing that EPA's prior delays in rulemaking contributed materially to these lower volume requirements. At present, advanced biofuel producers and their investors have little certainty about the future market for advanced biofuels under the RFS program.[103]

D. Data demonstrate a predictable shift in biofuel investment in the wake of RFS program uncertainty.

As the data in Figure 2 below demonstrate, investors reacted almost immediately and very strongly to EPA's delays and changes to its interpretation of and approach to the RFS statute and program since 2013. Investment in second-generation biofuel (commercial production as well as piloting and demonstration of advanced biofuel, excluding soy biodiesel) had been increasing over time from the establishment of the RFS2 in 2007 through 2012. The type of investment in second-generation technologies was also beginning to shift from venture capital and private equity, which is characteristic of early stage technologies, to partnerships, mergers and asset financing (or debt equity), which is more characteristic of a maturing industry. New commercial-scale cellulosic and advanced biofuel biorefineries began to start up operations in 2013 and prove production technologies and processes. Yet, no new commercial-scale production facilities have broken ground in their wake.

Instead, in 2013 there was a sharp drop in investment in advanced biofuel production and an increase in first-generation partnerships and mergers. While there was some renewed activity in 2014 – to roughly half the level occurring in

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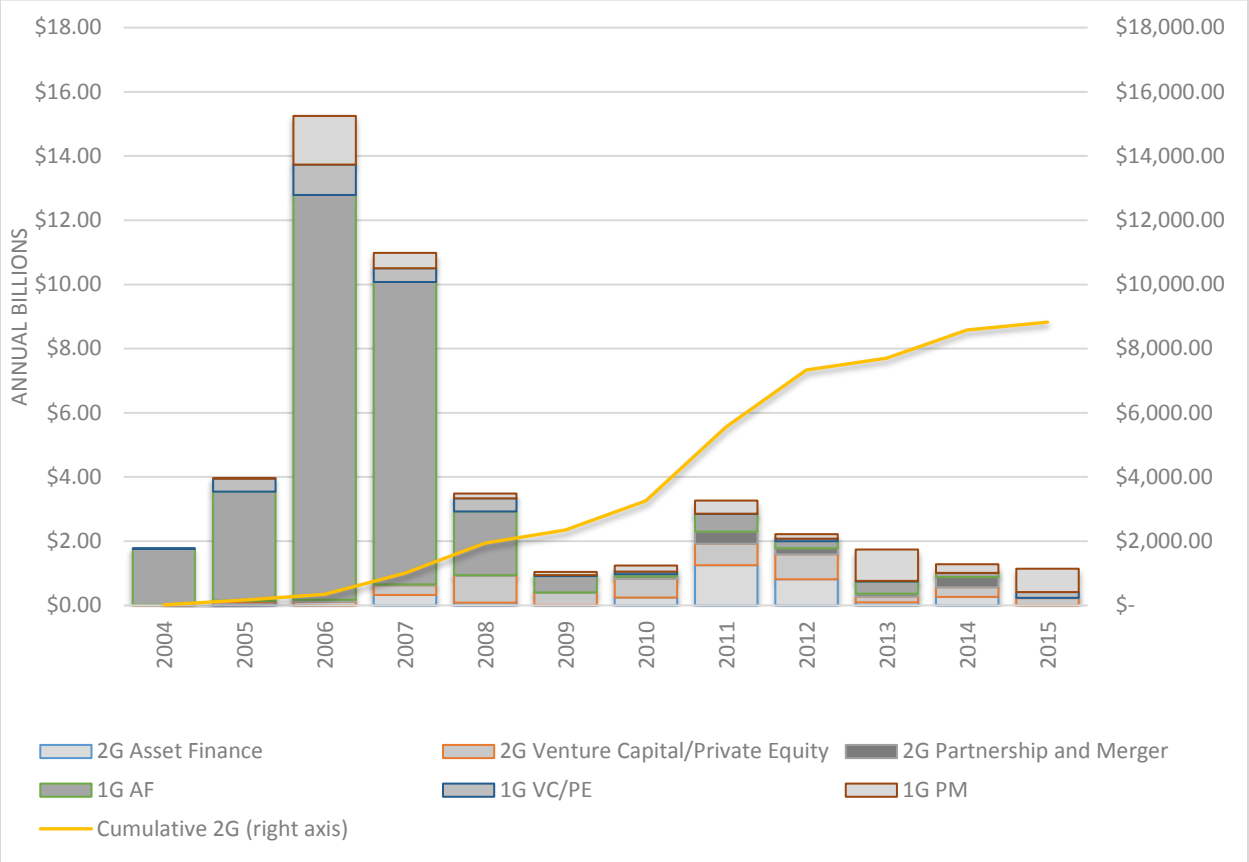
[101] Proposed Rule at 34793.

[102] It should be noted that depending on a number of factors, the pending litigation challenging the 2014-2016 RFS Rule may result in a new agency decision requiring significantly higher total advanced biofuel volumes for 2014, 2015, and/or 2016.

[103] We appreciate EPA's statement that it "anticipate[s] that the 2018 advanced biofuel requirement will be larger than the proposed 2017 advanced biofuel volume requirement." Proposed Rule at 34811; *see id.* at 34812 ("we anticipate . . . that the advanced biofuel volume standard will be larger in 2018 than in 2017"). Of course, to ensure proper growth in advanced biofuel volumes in 2018 and later years, EPA must issue appropriately robust and accurate volume requirements for 2017, and must avoid unneeded reductions to statutory requirements that become self-fulfilling prophecies.

2012 – as long-planned facilities began construction, investment activity once again dropped off in 2015. There were no asset financing deals reported during 2015.

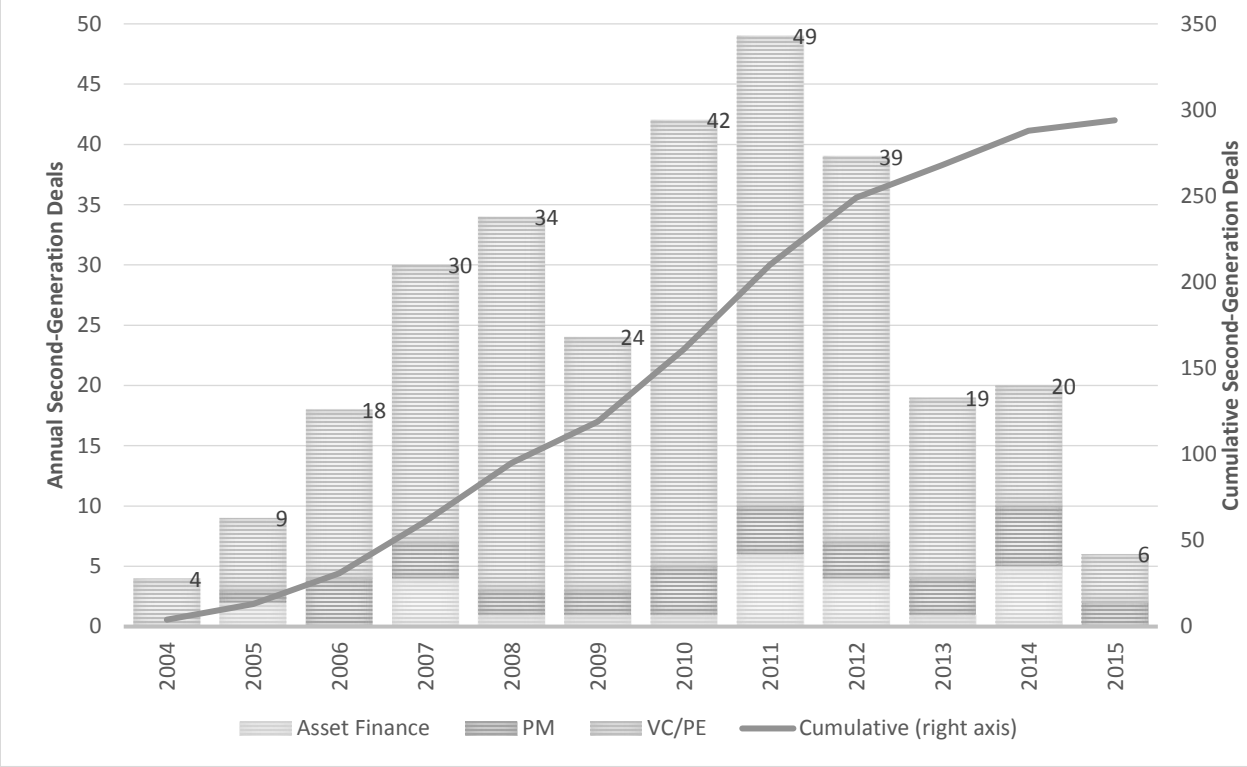
Figure 2: Annual Investment in First- and Second-Generation Biofuels By Type



Data from Bloomberg New Energy Finance; Ocean Park Advisors; United Nations Environment Programme.

The data on the number of announced second generation production deals display the same pattern, with the number of deals climbing through 2012 but sharply dropping from 2013 through 2015, as shown in Figure 3 below. Both EPA's delays in RFS rulemakings and EPA's methodology and approach to the statutory program have undercut the high-value asset finance or partnering investments necessary to continue progress in building large-scale production facilities. In fact, the methodology has had a demonstrably larger impact. The number of deal announcements in 2014 was similar to the number in 2011 – even though the overall value of the deals was cut in half – while EPA delayed finalizing a rulemaking it had proposed in 2013. But the number of deals shrank considerably in 2015 as EPA first issued a proposal and then finalized a rule setting in stone a damaging methodology.

Figure 3: Annual and Cumulative Number of Second-Generation Biofuel Deals by Type



Data from Bloomberg New Energy Finance; Ocean Park Advisors; United Nations Environment Programme.

The pattern for advanced biofuels contrasts with investment patterns in first-generation (corn ethanol and soy biodiesel) biofuel production. Investments in first-generation biofuel production peaked in 2006 – as the RFS1 spurred a rapid increase in renewable fuel production to meet increasing requirements – and primarily consisted of asset financing, characteristic of a more technologically mature industry. Importantly, additional investments – primarily through venture capital or partnerships – in new processes and in innovation to increase productivity and efficiency continued through 2014. The conventional biofuel industry reached the capacity to produce 15 billion gallons, enough to fill the market that Congress made available to the industry beginning in 2015 through the statutory volume requirements for that year and ensuing years. EPA's change of course announced in the 2014 RFS Proposal sparked new investment in 2015 in first-generation distribution infrastructure – directing it away from advanced biofuels.[104] Prior to

[104] In 2015, there were 10 acquisitions and mergers involving conventional ethanol and biodiesel production facilities. *See* Bruce Comer, "2015: A strong year for biofuels M&A," Biofuels International, Jan./Feb. 2016, at 33 (available at http://www.oceanparkadvisors.com/docs/a-stong-year-for-biofuels-jan-feb-2016.pdf). More generally, new investment in clean energy continued to be robust for wind, solar, and other clean energy technologies in 2014 and 2015, even as investment in biofuels diminished in

2014, several obligated parties made investments in ethanol production and storage and distribution infrastructure. A return to the successful methodology and approach that EPA employed until 2013 would again incentivize an equitable atmosphere for investments in both advanced biofuel technology and appropriate infrastructure.

E. EPA's approach to administering the RFS statute has continued to chill needed investment in advanced biofuels.

The advanced biofuel industry has invested billions of dollars since 2009 to build first-of-a-kind biorefineries around the world, even during a global economic recession, as shown by data in Figure 4 below. Companies commercializing new advanced biofuel pathways have spent years building and operating pilot and demonstration facilities in order to assure investors – and satisfy requirements of the USDA and DOE biorefinery loan guarantee programs – of the viability of projects.[105]

Several cellulosic biofuel producers now have achieved commercial production, and additional companies continue efforts to commercialize new processes. The advanced biofuel industry has reached a commercial stage where additional biorefineries can be built and operated based on existing designs and optimized processes, which can rapidly lower capital costs for advanced biofuel. But many projects have been put on hold since 2013. The chill in investment has had the heaviest impact on the cellulosic biofuel industry.

As noted above, in 2009, bio-era modeled the investment needed to build an advanced biofuel industry to meet the goals of the RFS.[106] Drawing on available pre-commercial biorefinery engineering and design studies, bio-era estimated that more than $95 billion in cumulative capital investments would be needed between 2009 and 2022 for construction of nearly 400 advanced biofuel biorefineries with the capacity to produce 23 billion gallons of advanced biofuel. Figure 4 below shows

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those years. *See* Clean Energy Investment: Q4 2015 Factpack at 17 (Jan. 14, 2016) (chart) (available from Bloomberg New Energy Finance, via http://www.bloomberg.com/company/clean-energy-investment/); see also Bloomberg New Energy Finance, Global Trends in Clean Energy Investment, *available at* http://www.bbhub.io/bnef/sites/4/2016/04/BNEF-Clean-energy-investment-Q1-2016-factpack.pdf (April 2016).

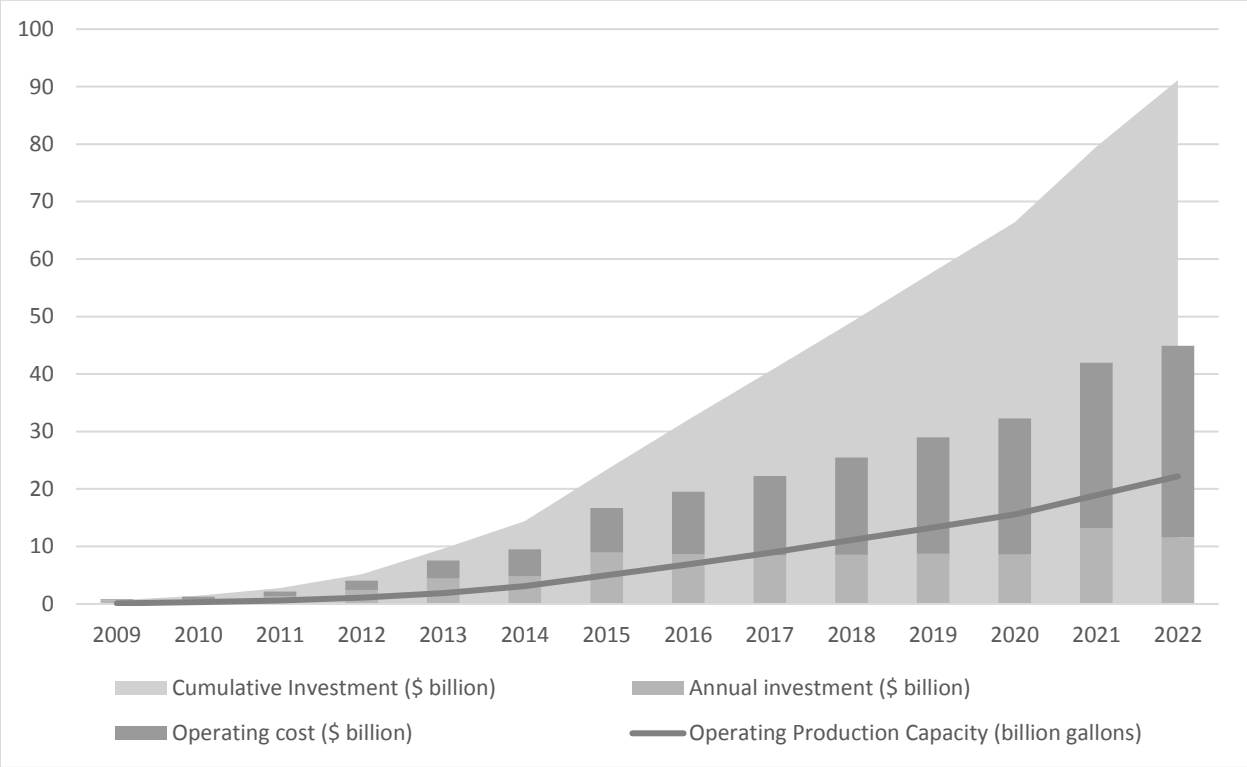
[105] *See, e.g.*, USDA Rural Development, *Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program*, *available at* http://www.rd.usda.gov/programs-services/biorefinery-renewable-chemical-and-biobased-product-manufacturing-assistance .

[106] Bio Economic Research Associates, U.S. Economic Impact of Advanced Biofuels Production: Perspectives to 2030 (Feb. 2009), *available at* https://www.bio.org/sites/default/files/EconomicImpactAdvancedBiofuels.pdf.

bio-era's estimated annual and cumulative capital investments needed to maintain the production ramp up envisioned in the RFS.

Added to the annual investment for construction costs are the annual operating costs for that new capacity. Given the challenges of simultaneously constructing biorefineries and building supply chains for new energy crops, the actual capital requirements for many first-of-a-kind cellulosic and advanced biorefineries have been higher than originally projected. Investors have required that the advanced biofuel industry engage in a capital-intensive process of ramping up pilot and demonstration biorefineries before building commercial ones.[107]

Figure 4: Projected Annual and Cumulative Investments Needed to Build Advanced Biofuel Capacity



To reach the 2016 RFS goal of producing 7.25 billion gallons of advanced biofuels, bio-era estimated the need for 153 operating plants requiring $32.03 billion dollars in cumulative investment. As of June 2016, there are six commercial cellulosic biorefineries with a combined capacity of more than 75 million gallons registered and operating to meet the goals of the RFS, along with several pilot and demonstration plants that have contributed volumes. Additionally, there are 36 biorefineries generating cellulosic biogas and registered to participate in the

[107] John May, Financing Genomes: Turning Transformative Innovation into Market Success, Presentation at BIO International Convention (June 16, 2015).

program.[108] Taking into account additional renewable diesel or jet fuel producers deploying novel technologies, such as Altair, Fulcrum, and Joule/Red Rock, the advanced biofuel industry has reached roughly the level of investment that bio-era originally projected for 2013 (about $9.63 billion), as shown in Figure 4 above. Capacity, however, remains far below what is needed.

The advanced biofuel industry's cumulative capacity-building delay corresponds to a shortfall in investment of about $22.4 billion since 2013. While the recession and the challenges of developing a new technology have been a factor, EPA's methodology and delays in rulemaking since 2013 have been the primary drivers of this shortfall in investment, due to their chilling effect on the industry and investors. The United States emerged from the recession in June 2009 and has experienced consistent, moderate annual economic growth since then. Further, advanced biofuel producers have continued to overcome the technological challenges of advanced biofuel production by building and operating biorefineries, and working with farmers and USDA to improve feedstock collection and storage.

EPA believes that its rules are "creating a sustained market signal to incentivize low greenhouse gas renewable fuels, especially for advanced biofuels."[109] We respectfully disagree. Investment patterns demonstrate that the agency's delays in issuing RFS rules and its unlawful and destabilizing changes to the substance of the program are sending the opposite signal. Investors are unwilling to risk hundreds of millions of dollars to produce advanced biofuels for which there is no room in the market or (even worse) advanced biofuels that will strand their existing investments in conventional biofuel. Without changes to EPA's approach, the shortfall in necessary investment will continue to deepen.

EPA should not doubt "[t]he ability of the standards to bring about market changes in the time available."[110] As explained above and in our past comments, EPA's rules and proposals have a nearly immediate impact on investment decisions. Because the proposed rule for 2017 continues EPA's damaging approach and will create uncertainty for the remainder of the year, 2016 is expected to be another year of chilled investment for the advanced biofuel industry. If EPA finalizes an improved rule by the end of the year, it could send a strong signal to the industry and revitalize investments, especially in commercially proven and replicable biorefinery technologies.

Among the changes necessary in the final rule for 2017 will be to abandon the unwarranted use of the general and cellulosic waiver authorities to create

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[108] EPA, Part 80: EPA Fuels Programs Registered Company/Facility ID List, *available at* https://www.epa.gov/fuels-registration-reporting-and-compliance-help/registered-companies-and-facilities-fuel-programs (last visited June 15, 2016).

[109] Proposed Rule at 34803.

[110] *Id.* at 34782.

competition between advanced and conventional biofuel producers. EPA should create market space for all renewable fuels that can be produced, up to the volumes established in the statute. EPA must also abandon the methodology that limits future market space to past production performance, due to its chilling effect on new production. EPA has acknowledged that RINs can incentivize infrastructure for and consumer marketing of higher renewable fuel blends.[111] The agency should allow the RIN system to work, and should not unduly impose infrastructure and marketing costs on renewable fuel producers.

VIII. If adopted in a final rule, EPA's proposal would forego attainable reductions in greenhouse gas emissions from the transportation sector.

EPA recognizes the global importance of measures for "limiting GHGs from major emitting sectors, such as electricity production and transportation."[112] Yet EPA's new substantive approach to the RFS, combined with its failure to establish RFS volumes in a timely manner for 2014 and 2015 – which negatively affected how EPA set volumes for 2016[113] – resulted in a measurable increase in greenhouse gas emissions above the level that would exist if EPA has set renewable fuel volumes at appropriate levels. Carbon dioxide emissions from the transportation sector are now surpassing those of the historically more prominent electricity production sector.[114]

EPA's failure to set RFS volumes that guarantee an increasing displacement, over time, of fossil fuels is a failure that subverts the intent of Congress and the design of the program. Because EPA is adopting the same methodology for setting the 2017 volumes, if the volumes EPA proposes for 2017 are finalized, the United

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[111] Dallas Burkholder, "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effects," EPA Office of Transportation and Air Quality (May 14, 2015); *see also* 2014-2016 RFS Rule at 77458-59.

[112] EPA, Office of Atmospheric Programs, "Climate Change in the United States: Benefits of Global Action," EPA 430-R-15-001, at 10, *available at* http://www2.epa.gov/sites/production/files/2015-06/documents/cirareport.pdf.

[113] *See, e.g.*, Proposed Rule at 34798.

[114] *See* Center for Climate and Energy Solutions, Transportation Sector Emissions Roll Over Power Sector Emissions (June 20, 2016), *available at* http://www.c2es.org/blog/vined/transportation-emissions-roll-over-power-sector-emissions ("[F]or the first time since 1979, U.S. cars, buses, trucks and airplanes emitted more carbon dioxide than U.S. power plants. Based on the latest available rolling 12-month average, the electricity sector emitted 1,868 million metric tons (MMt) of carbon dioxide while the transportation sector emitted 1,876 MMt.") (citing EIA data); *see also* Energy Information Administration, "June 2016: Monthly Energy Review," at 180-81 (June 27, 2016), *available at* http://www.eia.gov/mer (showing monthly data from 2014 through 2016 on carbon dioxide emissions from energy consumption associated with transportation sector and electric power sector respectively).

States will continue to forego attainable reductions in greenhouse gas emissions from the transportation sector.

The RFS was designed to reduce U.S. greenhouse gas emissions by displacing fossil fuels with less carbon intensive biofuels in transportation. Prior to the proposed rule for 2017, EPA recognized that achieving this goal of the RFS depended on ensuring "that biofuels replace fossil fuels used in transportation fuel in the United States."[115] With the proposed 2017 rule, however, EPA now seems to suggest that it is sufficient merely "[t]o increase the use of renewable fuels in the U.S. transportation system every year in order to reduce greenhouse gases," regardless of whether fossil fuels are displaced.[116] To the extent that such language represents a change in emphasis or approach on the part of EPA, such a change is mistaken and is inconsistent with the purposes of the governing statute.

Greenhouse gas reduction is dependent on measurable fossil fuel use reduction. The greenhouse gas intensity of petroleum fuels has grown worse in recent years;[117] at the same time, the greenhouse gas intensity of biofuels has improved, as production has become more efficient.[118] EPA's proposal for 2017 cuts short the effectiveness of the RFS program for emission reduction by limiting market space for renewable fuels and guaranteeing more market space for petroleum fuels.

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[115] Response to Comments for 2014-2016 RFS Rule, at 86; *see also* 2014-2016 RFS Proposal at 33121 ("The purpose of the RFS program is to ensure that renewable fuels are increasingly used to replace or reduce the use of fossil-fuel based transportation fuel."); 2014-2016 RFS Rule at 77421 ("Increased use of renewable fuels means less use of fossil fuels, which generally results in lower GHG emissions over time, especially when advanced biofuel production and use becomes more commonplace.").

[116] Proposed Rule at 34779; *but cf. id.* at 34803 ("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. . . . Through the RFS program, EPA is creating a sustained market signal to incentivize low greenhouse gas renewable fuels, especially for advanced biofuels. This should provide a way to reduce GHG emissions in future years as the market for renewable fuels develops further.").

[117] *See generally* Michael Wang et al. "Well-to-Wheels Energy Use and Greenhouse Gas Emissions of Ethanol from Corn, Sugarcane and Cellulosic Biomass for US Use," Environmental Research Letters 7, at 6-12 (2012), *available at* http://iopscience.iop.org/article/10.1088/1748-9326/7/4/045905/pdf.

[118] *See id.* at 1, 11-12; Energy Information Administration, Corn ethanol yields continue to improve, Today in Energy (May 13, 2015), *available at* http://www.eia.gov/todayinenergy/detail.cfm?id=21212; *see also* U.S. Department of Energy, Alternative Fuels Data Center, "Ethanol Vehicle Emissions," *available at* http://www.afdc.energy.gov/vehicles/flexible_fuel_emissions.html ("Using ethanol as a vehicle fuel has measurable greenhouse gas (GHG) emissions benefits compared with using gasoline.").

Despite EPA's prior concern that there was "less growth in gasoline use than was expected when Congress enacted these [RFS] provisions in 2007",[119] the Energy Information Administration currently projects gasoline and diesel fuel use to increase through 2017.[120] The increased use of transportation fuel in 2014 and 2015 led to increases in greenhouse gas emissions from the U.S. transportation sector year to year. In 2016, ongoing increases in transportation fuel use continue to increase greenhouse gas emissions. The projected increased use of transportation fuel in 2017 will also increase greenhouse gas emissions during the year. EPA could, however, substantially mitigate this anticipated increase by setting higher volumes for conventional and advanced biofuels for 2017.

According to the Energy Information Administration, U.S. transportation fuel use increased from 180 billion gallons in 2014 to 182 billion gallons in 2015. EIA projects that this number will increase further in 2016 and reach 183.2 billion gallons in 2017. EPA's failure to establish annual RFS volumes during 2014 and 2015 allowed obligated parties to meet increased transportation fuel demand with increased use of petroleum fuels, rather than renewable fuels, increasing greenhouse gas emissions beyond achievable levels. BIO estimates that transportation-related greenhouse gas emissions (measured in CO2e) increased by 72 million metric tons in 2014 and again by 22.9 million metric tons in 2015, from year to year. Further, based on EIA projections, BIO estimates that greenhouse gas emissions will increase in 2016 by 6.9 million metric tons, compared to 2015. And in 2017, emissions will increase by 16.8 million metric tons, if EPA finalizes the volumes it proposes.

If EPA had maintained the successful approach to the RFS that EPA used in 2013 – including EPA's approach to waiving cellulosic biofuel volume requirements – EPA could have considerably limited greenhouse gas emissions from the increase in transportation fuel use. But EPA's delays and changes in substantive approach increased greenhouse gas emissions above achievable levels by 13.8 million metric tons in 2014 and by 30 million metric tons in 2015, and are projected to increase emissions above achievable levels by 34.3 million in 2016 and 44.3 million metric tons in 2017, if the proposed volumes are finalized. Figure 5 below represents the increase in greenhouse gas emissions above the proper baseline as additional cars put on the road each year.

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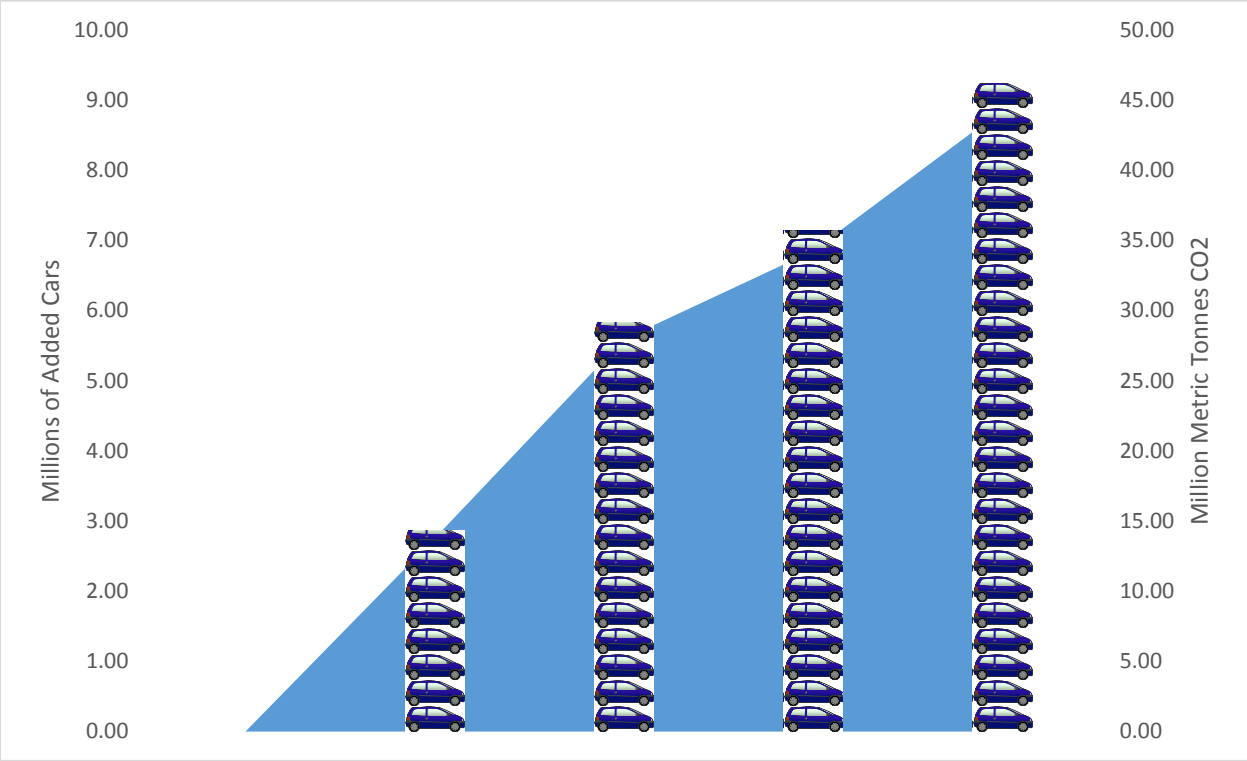
[119] 2014-2016 RFS Proposal at 33101.

[120] Energy Information Administration, Annual Energy Outlook 2016 Early Release, Report No. DOE/EIA-0383ER(2016) (May 17, 2016), *available at* http://www.eia.gov/forecasts/aeo/er/index.cfm.

Figure 5: Millions of Cars Added to the Road Under EPA's RFS New Methodology



EPA suggests that the greenhouse gas emissions reductions were not achievable because the statutory "volumes were not supportable."[121] The proposed rule avoids analyzing the GHG impacts for 2017.[122] And yet, EPA analyzes other costs of the 2017 rule – such as the compliance costs of obligated parties – using 2016 as the baseline.[123] By foregoing use of the general waiver to reduce overall volumes and limiting use of the cellulosic waiver to reduce advanced and overall volumes, EPA could in fact minimize growth in greenhouse gas emissions for 2017.

IX. Conclusion: EPA can make good the promise of the RFS with a commitment to stable implementation of the program in line with statutory requirements.

To sum up key elements of BIO's comments:

1. We continue to disagree with EPA's invocation of its general waiver authority. But assuming arguendo that EPA adheres to its position on this issue, EPA

[121] Response to Comments for 2014-2016 RFS Rule, at 757-58.

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

[123] Proposed Rule at 34801.

should set 2017 RVOs at significantly higher levels. Even under EPA's theory of the statute, EPA's proposed reductions in RVOs for 2017 are, as a general matter, too steep, and would unnecessarily destabilize the RFS program.

2. Subject to EPA's receipt of additional information that may warrant further increases, EPA should set the advanced biofuel RVO for 2017 at more than **4.6 billion gallons**, and the total renewable fuel RVO for 2017 at more than **19.6 billion gallons**. These numbers are calculated without taking into account the potential availability of carryover RIN credits noted below, and therefore are almost certainly lower than the actual numbers that should be used by EPA in setting the advanced biofuel and total renewable fuel RVOs for 2017.

3. In setting the volumes, EPA should take into account the availability of carryover **RIN credits**, and should not exclude them from its calculation of available domestic supply to be used in satisfying statutory volume requirements. The availability of RIN credits thus almost certainly requires increasing the numbers described above.

4. Even under EPA's theory of its statutory authority to waive volumes, EPA has no need to trigger the first step of a potential two-step "reset" ("off-ramp") process for reassessing volumes pursuant to Clean Air Act section 211(o)(7)(F) (42 U.S.C. § 7545(o)(7)(F)).

We respectfully urge the agency to work with us and other stakeholders to make the recommended changes laid out in our comments. EPA can make good the promise of the RFS with a commitment to stable implementation of the program in line with statutory requirements. This will enable EPA to get the program back on track and can help drive the growth of the advanced and cellulosic biofuels industry in the manner that Congress intended and, indeed, required. The result will be to spur the development of new investment, innovation, and job growth; to enhance energy and national security; and to combat climate change. We look forward to working with you toward these goals.

Sincerely,

Brent Erickson, Executive Vice President
Biotechnology Innovation Organization (BIO)