August 31, 2017

The Honorable Scott Pruitt
Administrator, Environmental Protection Agency
Air and Radiation Docket and Information Center
1200 Pennsylvania Avenue NW
Washington, DC 20460

Docket ID No. EPA-HQ-OA-2017-0091

Dear Administrator Pruitt:

The Biotechnology Innovation Organization (BIO) is pleased to provide comment on the U.S. Environmental Protection Agency's (EPA's) proposed rule on the **Renewable Fuel Standard Program: Standards for 2018 and Biomass-Based Diesel Volume for 2019 (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 more than 70 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.

As BIO illustrates in its comments below, the Renewable Fuel Standard (RFS) has been vital to the rapid investment, development, and growth of the U.S. biofuels industry. The proposed rule for the 2018 volumes puts this development at risk with a new methodology to limit the cellulosic biofuel volumes as well as the overall and advanced volumes, despite market projections that those fuels would be able to make up the shortfall in the cellulosic category. These arbitrary and unnecessary cuts will surely undercut investment and development in the advanced and cellulosic biofuel space, a result that is plainly contrary to the goals of the RFS intended by Congress. BIO urges EPA to resolve this issue and return to a forward-looking forecasting methodology that considers current and projected market activity. Further, EPA should work to resolve barriers keeping advanced and cellulosic biofuels from accessing the market, which include long-delayed approval for pathways and for biorefineries to generate Renewable Identification Numbers (RINs).

[1] Renewable Fuel Standard Program: Standards for 2018 and Biomass-Based Diesel Volume for 2018, 82 Fed. Reg. 34206 (Jul. 21, 2017). Available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2017-0091-0002 (Proposed Rule).

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

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I. Introduction

a. *Stable RFS has led to growth in the industry and rural economy and increasing energy independence*

The RFS has been the fundamental driver of investment, development, and growth of the U.S. biofuels industry since the law was first enacted in 2005 and enhanced in 2007. When properly implemented and allowed to function as Congress intended, the RFS led to billions of dollars in investment in new technologies and facilities, employing hundreds of thousands of Americans, often in rural communities. Despite EPA's statement that it is difficult to quantify the rural economic development and employment impacts from diversified fuels sources,[2] a recent analysis by Fuels America demonstrates these positive impacts: the RFS has led to $184.5 billion of economic output, 852,056 jobs, $46.2 billion in wages, and $14.5 billion in taxes each year.[3]

Rural economies throughout the U.S. have experienced investment and job growth from the RFS. According to the U.S. Department of Agriculture (USDA), in 2014, the biobased products industry contributed to 4.2 million jobs across the country, up from 4.0 million in 2013. In addition to the direct jobs created by the industry, the biobased economy generates a jobs multiplier of 2.76, meaning *for every 1,000 biobased products jobs, 1,760 more jobs are supported in the United States*.[4] This industry contributed $393 billion to the U.S. economy in 2014, up from $369 billion in 2013. Biofuel facilities are being built in rural communities near biomass resources. The demand for biomass helps agriculture producers by giving them a value-added product they can grow to offset low commodity prices. Since biorefineries are often located in rural communities, they have been and continue to be uniquely positioned to provide good, solid jobs to local employees, thereby helping to revitalize those communities.

Technologies developed because of the RFS have led to the growth and development of the biobased economy. Building on processes learned from biofuels production, BIO's member companies are developing new agricultural and low-carbon feedstocks, industrial enzymes, and biological catalysts for the conversion of biomass into advanced biofuels, alternative jet fuels, renewable chemicals, and

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[2] *See* Proposed Rule at 34238

[3] See Fuels America, Fuels America Releases New Footprint Analysis: Renewable Fuel Drives Economic Growth. Available at https://fuelsamerica.org/resources/fuels-america-releases-new-footprint-analysis/ (Apr. 15, 2014) (providing detailed description of study results, data sources, and methodology).

[4] Golden, J., Handfield, R., Daystar, J., & McConnell, E. (2016, Oct.). USDA: An Economic Impact Analysis of the U.S. Biobased Product Industry. Available at https://www.biopreferred.gov/BPResources/files/BiobasedProductsEconomicAnalysis2016.pdf

biobased products. Biobased production encompasses a complex value chain, from agriculture through the manufacture of consumer goods, that provides an alternative to the petroleum-based value chain and that brings environmental, economic, and other benefits. The biobased economy can generate new markets for agricultural producers, boost innovation in domestic manufacturing, and stimulate sustainable economic growth.

Now as much as ever, it is imperative for rural America that there continue to be strong and continued investment and growth in biofuels that will meet the increasing gallon requirements under the RFS. American farmers and rural communities are hurting economically. A multiyear slump in prices for corn, wheat and other farm commodities brought on by a world-wide glut of grain is pushing many farmers into debt. Net farm income dropped 15 percent to about $68 billion last year, the lowest since 2009,[5] according to the USDA. It is expected drop another 9 percent in 2017,[6] extending the steepest slide since the Great Depression into a fourth year. Farm household income fluctuations caused by volatility associated with agricultural production[7] is causing incomes to drop. As a result, the number of farms continues to decline with fewer than 2 million farmers in America.

In addition to helping the rural economy, the RFS has helped increase energy independence and security by lessening the United States' dependence on foreign sources of petroleum. While the U.S. has benefited in recent years from increased production of domestic oil and gas, we are still unnecessarily impacted by the global price of oil and those who control it. One need look no further than the Organization of the Petroleum Exporting Countries' (OPEC) efforts to undermine U.S. oil and gas producers, disrupting energy prices globally and domestically.[8] As the New York Times reported this summer, faced with increasing competition from growing oil and gas production in the United States, OPEC unexpectedly increased oil and gas production in late 2014. This resulted in a brief, but sharp, price slump that drove independent American producers out of business to guarantee continued OPEC dominance of international markets. As a result, American drilling did drop precipitously, as companies decommissioned more than half their rigs and

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82 Fed. Reg., 34213-14. July 21, 2017 82 Fed. Reg., 34213-14. July 21, 2017. https://www.wsj.com/articles/trade-punishment-for-trump-voters-1486686758

[6] Newman, J., & McGroarty, P. (2017, Feb. 8). The Next American Farm Bust Is Upon Us. WSJ. Available at https://www.wsj.com/articles/the-next-american-farm-bust-is-upon-us-1486572488

[7] Good, K. (2017, Feb. 28). USDA Report Examines Farm Household Income Volatility. Farm Policy News. Available at https://farmpolicynews.illinois.edu/2017/02/usda-report-examines-farm-household-income-volatility/

[8] Krauss, C. (2017, Jun. 15). OPEC Took Aim at U.S. Oil Producers, but Hurt Itself, Too. The New York Times (NYT). Available at https://www.nytimes.com/2017/06/15/business/energy-environment/gas-oil-petrol-opec.html?_r=0

neglected to complete wells already drilled through 2015 and part of last year. After these domestic producers were driven from the market, OPEC decided to cut its oil production in November 2016, causing a 10 percent[9] increase in price that day. By December 12, prices had reached an 18-month high.[10] These costs go beyond impacting the price at the pump for consumers. To ensure foreign oil continues to be available, a 2009 Rand Corporation study estimated U.S. Armed forces spent between $67.5 billion and $83 billion annually in protecting the global oil infrastructure.[11] The RFS has helped lessen the impact of these actions. In 2015, renewable fuels displaced an amount of gasoline equivalent to 527 million barrels of crude oil. That amount is roughly the volume of oil imported annually from Saudi Arabia and Kuwait combined.[12]

b. Uncertainty under the RFS undermines growth of the biobased industry

As discussed above, the RFS has provided the policy support that has enabled the biofuels industry to be a strong driver of economic growth in rural America and further the development of advanced and cellulosic biofuels that will lessen our dependence on foreign oil. It is vital that EPA take care in its final rule to send the proper signal to RFS stakeholders, including investors, that the RFS policy is stable and that the U.S. biofuels market will remain so. This signal will certainly help prevent another downturn in biofuels investment, the devastating effects of which would ripple throughout the whole biobased and agricultural economy.

Such a downturn was seen after EPA's previous departure from its prospective and consistent implementation of the RFS. In the Agency's 2014 RFS Proposal, EPA announced its intention to undertake a sharp departure from its prior approach to interpreting and implementing the statute.[13] This departure in the 2014 proposed rule inaugurated a destabilizing period for the program. The proposal was finalized

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[9] Resnick-Ault, J. (2016, Nov. 28). Oil jumps over 10 percent as OPEC finalizes output cut deal, Reuters. Available at: http://www.reuters.com/article/us-global-oil-idUSKBN13O06N

[10] Fortune. (2016, Dec. 12). Oil Prices Jump to 18-Month High After More Countries Agree to Cut Production. Available at http://fortune.com/2016/12/12/oil-prices-18-month-high-opec-output-cuts/

[11] RAND Corporation, Imported Oil and U.S. National Security, 2009, at 71-74. Available at http://secureenergy.org/wp-content/uploads/2016/01/Oil_Security_2025_0.pdf)

[12] Urbanchuk, J. (2016, Feb.). Contribution of the Ethanol Industry to the Economy of the United States in 2015. ABF Economics, Agriculture and BioFuels Cosulting, LLP. Available at http://ethanolrfa.org/wp-content/uploads/2016/02/Ethanol-Economic-Impact-for-2015.pdf

[13] EPA 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").

in the "Renewable Fuel Standard Program: Standards for 2014, 2015, and 2016 and Biomass-Based Diesel Volume for 2017" ("2014-2016 RFS").[14]

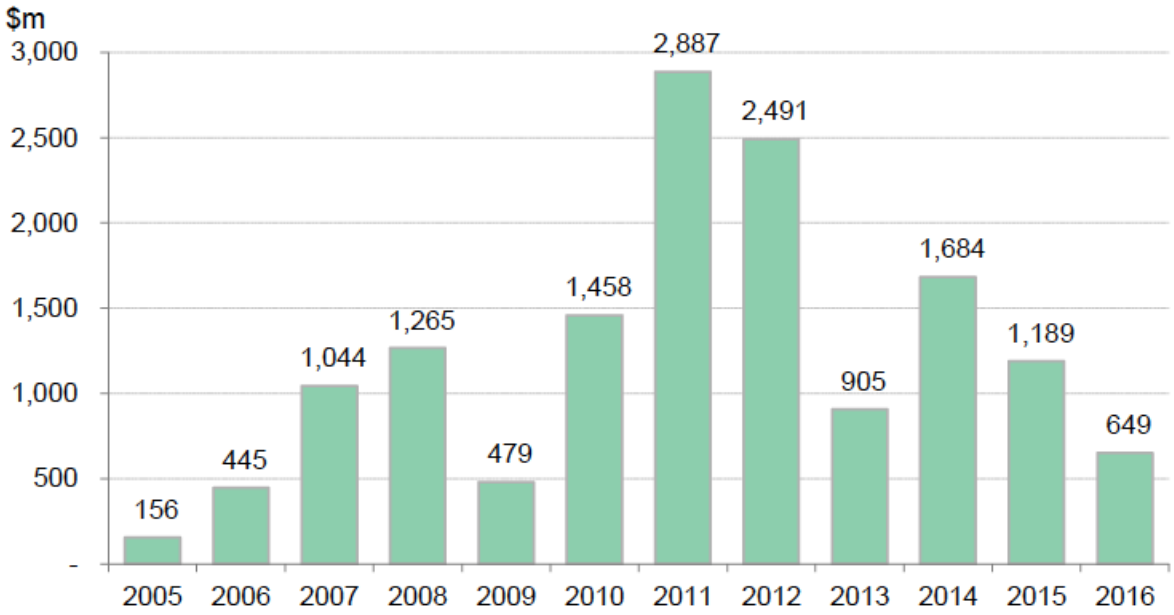
EPA's delays in establishing the 2013, 2014 and 2015 annual rules created untenable uncertainty for advanced biofuel producers and impacted investment. BIO's analysis in Appendix A, attached to this document shows that EPA's rulemaking delays, unwarranted expansion of its waiver authorities, and new methodology for setting annual RVOs led to a shortfall of roughly $22.4 billion in investment in advanced biofuels.[15] This analysis has been corroborated by data from Bloomberg New Energy Finance; Ocean Park Advisors; and United Nations Environment Programme. The data shows that 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.[16]

[14] EPA 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").

[15] See Appendix A – BIO Estimating Another Year of Chilled Investment in Advanced biofuels Due to RFS Uncertainty. Available at https://www.bio.org/sites/default/files/Estimating_Another_Year_of_Chilled_Investment.pdf

[16] In 2015, there were 10 acquisitions and mergers involving conventional ethanol and biodiesel production facilities. *See* Bruce Comer. (2015, Dec. 23). A strong year for biofuels M&A. Biofuels International, Vol. 10 Issue ,. 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 those years. *See* Clean Energy Investment: Q4 2015 Factpack at 17 (2016, Jan. 14). Bloomberg New Energy Finance (chart). Available at http://www.bloomberg.com/company/clean-energy-investment/); *See also* Bloomberg New Energy Finance. (2016, April). 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.

Figure 1: Global Investment in Next-Generation Biofuels and Biochemicals



Source: Bloomberg New Energy Finance[17]

Figure 1 illustrates how EPA's change in implementation of the RFS corresponded with the timing of the downward shift in global investment in next-generation biofuels and biochemicals. This suggests that EPA's change in RFS implementation, as discussed above, has in fact constrained the investment in and potential for biofuels in the U.S. transportation fuel market. Additional detail from Bloomberg New Energy Finance (BNEF) indicates that investment is leaving the U.S. and emphasizing renewable chemicals and jet fuels, where the global market provides more opportunities. The trend indicates that EPA is failing to keep the U.S. transportation fuel market open to biofuels through the RFS.

According to BNEF, global investment in advanced biofuel technology in 2016 declined to the lowest level since 2009, as the majority of investment in the sector went to renewable chemicals and to overseas markets. Investment in advanced biofuels in 2016 was just 22 percent of that in 2011, 39 percent of that in 2014, and 55 percent of that in 2015. In 2016, more cellulosic ethanol capacity was taken offline than commissioned, although production increased. No additional renewable or cellulosic diesel capacity was commissioned. Nonetheless, in 2017 BNEF expected 327 million gallons of renewable diesel and jet fuel and 20 million gallons of cellulosic ethanol to come online around the world.

While the instability of the RFS undermined investment and development in the United States, the advanced and cellulosic industry continued to grow in other parts of the world. Specifically, during the period of uncertainty due to the 2014-16 RFS,

[17] Curry, C., Fanele, Z., Grant, A., McLaughlin, D. (2016). Next-Generation Biofuel Update. New York: Bloomberg New Energy Finance, 20 Jan. 2017.

we saw a number of projects announced overseas by companies who developed advanced and cellulosic biofuels technology in the U.S. In Europe, the Government of the Republic of Macedonia joined a memorandum of understanding with Ethanol Europe Renewables and DuPont on Cellulosic Ethanol.[18] Novozymes announced a deal to supply enzymes to St1 Biofuels in Finland.[19] In China, DuPont and New Tianlong Industry Co., Ltd. signed a deal to bring cellulosic ethanol technology to China.[20] As the RFS continued to face legal and legislative challenges in the U.S., DSM sought alternative investment markets such as private and state-owned organizations in China interested in licensing DSM's biofuels technology.[21] Raizen and Iogen commenced cellulosic ethanol production in Brazil.[22]

c. Investment was coming back online

Despite the challenging economics facing these companies, many companies continued to develop and refine their technologies. They were well-positioned when EPA issued its 2017 RFS final rule. That rule sent a clear market signal to encourage growth in U.S. advanced and cellulosic biofuels. As a result, many companies announced plans to grow or expand their U.S. footprint. As stated above, BIO asks that EPA take great care to send an effectually similar market signal when it issues its final 2018 RFS rule.

In May, Nebraska Governor Pete Ricketts announced that Novozymes planned a $36 million expansion at its facility in Blair, Nebraska. That facility, which produces enzymes for renewable fuels, will increase the plant's capacity to meet growing

[18] DuPont, All Rights Reserved. (2014, Oct. 13). The Government of the Republic of Macedonia Joins Memorandum of Understanding with Ethanol Europe Renewables and DuPont on Cellulosic Ethanol. Available at http://www.dupont.com/products-and-services/industrial-biotechnology/advanced-biofuels/articles/macedonia-signs-mou-for-cellulosic-ethanol.html

[19] Novozymes, All Rights Reserved. (2015, May 4). Novozymes to supply enzymes to St1 Biofuels in Finland. Available at http://www.novozymes.com/en/news/news-archive/2015/05/novozymes-to-supply-enzymes-to-st1-biofuels-in-finland

[20] DuPont, All Rights Reserved. (2015, July 16). DuPont and New Tianlong Industry Co., Ltd. Sign Historic Deal to Bring Cellulosic Ethanol Technology to China. Available at http://www.dupont.com/corporate-functions/media-center/press-releases/dupont-NTL-sign-historic-deal-cellulosic-ethanol-tech-china.html

[21] E&E News, Biofuels. (2016, Feb. 25). DSM's Welsh talks company's plans to shift investments to China. Available at https://www.eenews.net/tv/videos/2099

[22] Lane, J. (2014, Dec. 17). Raizen, Iogen commence cellulosic ethanol production in Brazil. Biofuels Digest. Available at http://www.biofuelsdigest.com/bdigest/2014/12/17/raizen-iogen-commence-cellulosic-ethanol-production-in-brazil/

needs within the bioscience industry and global biofuels market.[23] POET-DSM Advanced Biofuels, after 18 months of design improvements to its Project Liberty plant and further investments to improve yields to make the process more consistent and reliable, announced that the facility is producing at a rate of 70 gallons per bone-dry ton of biomass, near the target conversion rate, and is currently in a ramp-up phase. As a result, POET-DSM is now planning on building an on-site enzyme manufacturing facility in Emmetsburg, Iowa.[24] In California, Pacific Ethanol and Edeniq announced they have entered into a technology licensing and purchase agreement to enable the production of cellulosic ethanol at Pacific Ethanol's Madera, California plant using Edeniq's Pathway and Cellunator Technologies. The Madera plant has a total annual production capacity of 40 million gallons and is expected to produce up to one million gallons per year of cellulosic ethanol with Edeniq's Pathway process. Installation is expected to be completed in the third quarter of 2017.[25]

Not only is this revitalized investment a positive for the advanced and cellulosic biofuels industry and the development of alternative sources of transportation fuel, this opens new markets for farmers in the currently depressed United States farm economy. Matt Merritt, Director of Public Relations for POET DSM, has noted, "lower prices, lower farm income, land values are certainly starting to come down more and more, and things are touch [and go] right now. What cellulosic ethanol offers is an opportunity to get a new crop, and it's a new crop [farmers] are already growing."[26] However, while there are many expansion opportunities for cellulosic ethanol production, legislative and regulatory efforts to revise or eliminate the RFS could set back efforts. It is crucial to the ongoing development of U.S. biofuels that the RFS law remains unchanged and that EPA implements that law in a stable and consistent way that promotes and helps facilitate investment and growth of the industry.

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[23] Nebraska, All Rights Reserved. (2017, May 16). Gov. Ricketts, Novozymes Unveil $36 Million Investment in Blair. Available at https://opportunity.nebraska.gov/gov-ricketts-novozymes-unveil-36-million-investment-in-blair/

[24] POET-DSM, All Rights Reserved. (2017, Feb. 17). POET-DSM plans on-site enzyme manufacturing facility at Project Liberty. Available at http://poet-dsm.com/pr/poet-dsm-plans-on-site-enzyme-mfg-at-liberty

[25] Pacific Ethanol Inc., All Rights Reserved. (2017, Feb. 16). Pacific Ethanol To Produce Cellulosic Ethanol at its Madera Plant. Available at http://ir.stockpr.com/pacificethanol/press-releases/detail/492/pacific-ethanol-to-produce-cellulosic-ethanol-at-its-madera-plant

[26] Brownfield Ag News for America. (2017, Apr. 10). POET Remains Committed to Developing Cellulosic Ethanol Blends. Available at http://brownfieldagnews.com/news/poet-remains-committed-developing-cellulosic-ethanol-blends/

d. 2018 RFS Renewable Volume Obligations (RVOs) undermines development of advanced and cellulosic biofuels potential

BIO requests that EPA revise its proposed 2018 RFS rule to build upon the successes of the 2017 RFS and send a signal that there will be market growth for advanced and cellulosic biofuels. The proposed rule in its current form puts at risk industry progress and development with a new methodology that will in effect limit the volumes for cellulosic biofuels. The 2018 proposal fails to set the 2018 cellulosic gallon requirements by taking a "neutral aim at accuracy." the Agency has proposed the cellulosic gallons by looking backwards instead of determining projected cellulosic gallons for next year by, among other things, taking into account the massive progress the industry has experienced over the last twelve months, combined with the potential effect on the industry's capacity should EPA announce a way for grandfathered ethanol plants to utilize the efficient producer pathway to co-generate D6 and D3 qualifying RINs.[27] As such, the proposed methodology undercuts rather than drives the outcomes intended by Congress and sought by President Trump.[28] To resolve this issue, the Agency should return to a forward-looking forecasting methodology that considers current market activity, as described above. Historical data and trends alone are insufficient to project the volume of cellulosic biofuel that could be provided in future years. The methodology is critical because investors need to know that it is geared to be inclusive rather than exclusive of new gallons.

EPA must finalize the 2018 RFS rule using a methodology that makes only necessary volumetric adjustments by looking forward and not only or mostly at historical progress in the advanced and cellulosic space. Greater advanced and cellulosic biofuel volumes can be developed if EPA implements the RFS as intended and takes the necessary steps to allow these fuels to compete in the marketplace.

We commend the efforts and progress EPA has made with respect to approving new pathways and creating efficiencies in the pathway petition process. It is important that the Agency take care to continue these efforts, especially since it still takes EPA, on average, more than three years to propose rules to approve new biofuel pathways. The average waiting time for final action on the proposed rules is now more than 1.5 years. It is critical that prospective producers be notified in a timely manner whether their pathways or processes are RFS-eligible. Approval of these pathways will enable the production of advanced and cellulosic gallons to meet the goals of the RFS. Additionally, we urge the Agency to address other specific issues that, if resolved, would greatly help the biofuels industry bring more RIN qualifying

[27] *See American Petroleum Institute v. EPA*, 706 F.3d 474, 476 (D.C. Cir. 2013), reaffirmed by *American for Clean Energy, et al (ACEI) v. EPA*, Case. No. 16-1005, Docket No. 1686284 (D.C. Cir. 2017).

[28] Henry, D. (2017, Feb. 21). Trump reaffirms support for ethanol in industry letter. The Hill. Available at http://thehill.com/policy/energy-environment/320534-trump-reaffirms-support-for-ethanol-in-industry-letter

gallons to market. For instance, there are outstanding questions related to bio-intermediates, co-digestion, corn fiber, and the biogas-to-electricity pathway. The faster EPA determines and then communicates when emerging fuels are eligible to qualify under the RFS, the more the biofuels industry can provide dependable data to EPA on the expected rate and level of commercialization, as well as attract and maintain investment.

Earlier this year BIO commented on EPA's proposed rule meant to improve the RFS, the Renewables Enhancement and Growth Support (REGS) rule.[29] Unfortunately, EPA has shelved the proposed rule. EPA should finalize the REGS rule, as it would address some pathway and technical issues facing the RFS.

Another major impediment to the use of cellulosic biofuels, discussed in greater detail later in the comments, is obligated parties taking advantage of the availability of cellulosic waiver credits and leveraging more overarching uncertainty in the D3 RIN marketplace. With minor adjustments, EPA can improve the administration of the cellulosic biofuel waiver credit program to prevent oversupply and other market depressing effects.

We urge the EPA to take the steps outlined above, which will lead to the development and availability of increased RIN qualifying cellulosic biofuels volumes. It will also enable the Agency to boost the overall volumes for the 2018 RFS RVOs.

II. EPA Correctly Determined not to use the General Waiver Authority

EPA was correct when it decided not to use the general waiver authority to further reduce biofuel volumes under the RFS.[30] Such a waiver is only necessary if implementation of the RFS would severely harm the economy or the environment of a State, a region, or the United States, or if there is an inadequate domestic supply.[31] There is no evidence the RFS is having a negative impact on any of these areas.

a. Economic Impacts

As discussed in the opening, the RFS has only been a positive influence on the nation's overall economy. It has driven investment and development of high-skilled jobs to our nation's rural economies. It has spurred the development of manufacturing and biobased technologies. It has provided stability to volatile commodity markets for our nation's farmers and it has provided additional revenue

[29] EPA Renewables Enhancement and Growth Support Rule, 81 Fed. Reg. 80828 (Nov. 16, 2016). Available at https://www.gpo.gov/fdsys/pkg/FR-2016-11-16/pdf/2016-25292.pdf

[30] See Proposed Rule at 34213

[31] Clean Air Act section 211(o)(7)(F) (42 U.S.C. § 7545(o)(7)(A))

for producers. Unfortunately, despite its successes, myths continue to persist that the RFS has a detrimental impact on food and transportation fuel prices.

While ethanol production has increased to nearly 15 billion gallons since the RFS was expanded in 2007, the price of food is on the decline – in 2016, food prices declined for the first time since 1967.[32] In 2013, the World Bank demonstrated that oil, not biofuels, was the biggest determinate of food prices. It showed that two-thirds of the post-2004 food price increase is attributable to the price of crude oil, reinforcing the near-perfect correlation of oil and food prices that has occurred since 2000.[33]

At the pump, biofuels have saved consumers money. In 2013 it was found that the RFS has saved the American consumer an average of $1 a gallon since it was adopted.[34] Our comments will examine the RIN program and market in greater detail below, but to the question of whether the cost of RINs negatively impacts gasoline prices for consumers, the answer is no. EPA's analysis of this issue in 2015 concluded that the price of RINs has no impact on gasoline price.[35]

b. Environmental Impacts

EPA notes in the proposed rule that it has received numerous comments in previous rulemakings asserting that there are negative environmental impacts that may be associated with the RFS.[36] However, many of the studies or analyses cited in these public comments utilize faulty methodology that does not accurately capture the benefits of biofuels. As BIO pointed out in 2015, over the first 10 years of the RFS, the law's requirements displaced nearly 1.9 billion barrels of foreign oil and reduced

[32] USDA. (2017, Aug. 25). Summary Findings Food Price Outlook, 2017-18. Available at https://www.ers.usda.gov/data-products/food-price-outlook/summary-findings/

[33] Baffes, J. & Dennis, A. (2013, May). Long-Term Drivers of Food Prices. The World Bank Development Prospects Group & Poverty Reduction and Economic Management Network Trade Department. Available at http://documents.worldbank.org/curated/en/832971468150565490/pdf/WPS6455.pdf

[34] Verleger, P. (2014, Jan. 23). RFS kept gas prices down. The Hill. Available at http://thehill.com/blogs/congress-blog/energy-environment/196135-rfs-kept-gas-prices-down

[35] EPA Renewable Identification Number (RIN) Analysis for Renewable Fuel Standard Program. Available at https://www.epa.gov/renewable-fuel-standard-program/renewable-identification-number-rin-analysis-renewable-fuel-standard and http://www.reuters.com/article/us-usa-biofuels-epa-idUKKBN0OR2TZ20150611

[36] *See* Proposed Rule at 34229

U.S. transportation-related carbon emissions by 589.33 million metric tons.[37] The total reduction in harmful greenhouse gas emissions (GHGs) is equivalent to removing more than 124 million cars from the road over the decade.[38] These savings mostly resulted from the increase in the use of conventional biofuels.

These environmental benefits were not just identified by BIO's analysis, but by independent federal government analysis as well. For instance, Argonne National Labs Greenhouse Gas Assessment Model (GREET) has found that corn ethanol delivers on average a 34-percent reduction in GHGs over gasoline. These savings result even after penalizing biofuels for both direct and indirect land use change something petroleum is not penalized for under GREET.[39]

The U.S. Department of Agriculture (USDA) report, "A Life-Cycle Analysis of the Greenhouse Gas Emissions of Corn-Based Ethanol" found that GHG emissions associated with producing corn-based ethanol in the United States are about 43 percent lower than gasoline when measured on an energy equivalent basis. [40] Unlike other studies of GHG benefits, which relied on forecasts of future ethanol production systems and expected impacts on the farm sector, this study reviewed how the industry and farm sectors have performed over the past decade to assess the current GHG profile of corn-based ethanol.

The environmental benefits of biofuels go beyond GHG reductions. Ethanol reduces tailpipe emissions of both hydrocarbons and carbon monoxide, which helps prevent the formation of ground-level ozone. Data from 222 EPA sensing sites show that ozone levels have fallen during the period in which ethanol blending increased.[41]

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[37] BIO The Renewable Fuel Standard: A Decade's Worth of Carbon Reductions. Available at https://www.bio.org/sites/default/files/RFS%2010%20Year%20GHG%20Reductions.pdf

[38] BIO: The Renewable Fuel Standard: A Decade's Worth of Carbon Reductions. Available at https://www.bio.org/sites/default/files/RFS%2010%20Year%20GHG%20Reductions.pdf

[39] Wang, M., Han, J., Dunn, J., Cai, H. & Elgowainy A. (2012, Nov. 22). Well-to-wheels energy use and greenhouse gas emissions of ethanol from corn, sugarcane and cellulosic biomass for US use. IOP Science. Available at http://iopscience.iop.org/1748-9326/7/4/045905/pdf/1748-9326_7_4_045905.pdf

[40] USDA Factsheet: Lifecycle Greenhouse Gas Emissions of Corn-Based Ethanol. Available at https://www.usda.gov/oce/climate_change/mitigation_technologies/Ethanol_Report_Factsheet_Final.pdf and https://www.usda.gov/oce/climate_change/mitigation_technologies/USDAEthanolReport_20170107.pdf

[41] Cooper, G. (2014, Dec. 18). Real-World Ozone and Particulate Data Expose Fallacy of Minnesota Study. Renewable Fuels Association (RFA). Available at http://www.ethanolrfa.org/2014/12/real-world-ozone-and-particulate-data-expose-fallacy-of-minnesota-study/

Additional data from the University of Illinois-Chicago show substantial reductions in particulate matter (PM) and benzene with the addition of ethanol.[42] Biofuels' ability to reduce particulate matter in fuels is not limited to ground transportation. Using biofuels to help power jet engines reduces particle emissions in their exhaust by as much as 50 to 70 percent.[43] These findings are the result of a cooperative international research program led by NASA and involving agencies from Germany and Canada.

It is clear that the growing use of biofuels does not have any net negative environmental impacts and that the RFS program is actually reducing greenhouse gas emissions and improving air quality.

c. Inadequate Domestic Supply

There is no need for EPA to reduce volumes under the RFS due to inadequate supply. We agree with EPA's determination that there will be adequate renewable fuel to meet an applicable volume requirement of 19.24 billion gallons in 2018[44] and contend that volumes should be set higher through the advanced and cellulosic biofuel pools to reflect this market reality.

In conclusion, BIO agrees that it would be inappropriate for EPA to use its general waiver authority under the RFS to make further reductions in the 2018 annual RVOs.

III. EPA Is Maintaining an Unnecessarily Large Bank of Carryover RINs

EPA should allow obligated parties to utilize carryover RINs to make up for the cellulosic biofuel shortfall, thereby eliminating any perceived need to reduce advanced and overall RVOs. As explained in detail below, EPA misapplies, without sufficient explanation, the programmatic buffers and flexibilities that Congress designed to prevent the need for waivers and to ensure the program runs smoothly.

As directed by Congress, EPA established the RIN system to provide credits to obligated parties who use renewable fuels above their annual RVOs. EPA now sets its own policy preference for the RIN program. Rather than provide credits to

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[42] Mueller, S. (2017, May). UIC Study PM and Benzene in Splash Blended Fuels with Ethanol. Available at http://www.erc.uic.edu/assets/pdf/UIC_Cook_County_Slides.pdf

[43] National Aeronautics and Space Administration (NASA). (2017, Mar. 15). NASA Study Confirms Biofuels Reduce Jet Engine Pollution. Available at https://www.nasa.gov/press-release/nasa-study-confirms-biofuels-reduce-jet-engine-pollution

[44] *See* Proposed Rule at 34229

obligated parties who over-comply, EPA is acting to ensure "sufficient carryover RINs are held in reserve for potential use by the RIN holders themselves, or for possible sale to others that may not have established their own carryover RIN reserves" and to protect obligated parties who are required to "settle past enforcement-related obligations in addition to the annual standards."[45]

Building a bank of carryover RINs requires production and use of renewable fuels over the established annual standards. A seminal 2012 white paper from researchers at the University of Missouri's Food and Agricultural Policy Research Institute (FAPRI) first demonstrated the mathematical concept that EPA could not perpetually maintain a RIN bank under the RFS, since renewable volume requirements were designed to increase each year.[46] EPA also recognized this mathematical concept in the 2014-2016 RFS rule, noting "the ability to over-comply and create carryover RINs has become increasingly difficult."[47] Since 2014, however, EPA has waived substantial volumes of the advanced RVO in order to build inordinately large carryover RIN banks for the benefit of obligated parties. EPA now proposes to reduce the annual advanced RVOs in 2018 below levels set for 2017 "even where the market overall could satisfy the standards" in order to maintain RIN banks.[48] The Agency's proposal directly contravenes Congress' intent to prioritize growth in advanced biofuels.[49]

Additionally, several new facts have now emerged that undercut EPA's policy choice to maintain RIN banks. EPA delayed compliance deadlines for the 2013, 2014 and 2015 RVOs for the benefit of obligated parties. With compliance now complete through 2016, it is evident that inordinately large RIN banks have not lowered compliance costs for refiners. Obligated parties' aggregate use of carryover RINs and carry forward deficits demonstrate that EPA misanalysed the market in 2013 and 2014.[50] EPA is now requesting comment on potential RIN market manipulation, indicating that the RIN banks do not ensure liquid, well-functioning markets.

a. EPA's calculation of carryover RIN banks is flawed

[45] 82 Fed. Reg., 34213-14. July 21, 2017.
[46] Thompson, W. et al. (2012). "A Question Worth Billions: Why Isn't the Conventional RIN Price Higher?" Columbia, MO: Food and Agricultural Policy Research Institute. FAPRI-MU Report #12-12.

[47] 80 Fed. Reg. 77485, Dec. 14, 2015.

[48] 82 Fed. Reg. 32413, July 21, 2017.

[49] *Ibid.*

[50] Winters, P. (2017). "A new question worth billions: why did RIN prices spike in 2013?" Biofuels. 2017, July 17. Doi: 10.1080/17597269.2017.1345358.

EPA substantially improves its analysis of RIN banks by using actual compliance data through 2016.[51] The Agency nonetheless miscalculates the size of carryover RIN banks from 2012 through 2015. EPA consistently reduces the number of annual carryover RINs by subtracting the annual compliance deficits, which have to be satisfied at the time of compliance with the subsequent year's standards.[52] This method double-counts the compliance deficits, which are included in refiners' and importers' subsequent year reported RINs used for compliance.

This miscalculation is demonstrated in Table 1 below. The first three columns replicate Table 9 from the "Carryover RIN Bank Calculations for 2018 NPRM" memorandum to docket EPA-HQ-OAR-2017-0091. The final two columns are calculated from refiners' and importers' (excluding exporters) actual reported use of prior year RINs to meet annual reported RVOs.[53] Even excluding the carryover RINs exporters used each year to meet exporter RVOs (ERVOs), *the use of RIN banks is substantially higher than EPA calculates for 2013-2016.*

Table 1: Comparing EPA Estimate of Carryover RIN Bank to Reported Use of Carryover RINs

Compliance Year	Reported Overall RVO	EPA Estimate of Carryover RINs Available	EPA Estimate as % of RVO	Reported Actual Carryover RINs Retired	Reported Carryover RINs as % of RVO
2013	16,847,826,477	2,466,248,156	14.6	2,492,853,584	14.8
2014	16,270,209,399	1,583,274,541	9.7	1,610,209,965	9.9
2015	17,186,141,360	1,671,309,079	9.7	1,793,286,971	10.4
2016	18,198,587,168	1,649,414,099	9.1	1,632,231,767	9.0
2017	19,280,000,000	2,059,921,922	10.7		

In its calculations, EPA also failed to consider the substantial numbers of RINs that expired unused between 2010 and 2014.

EPA further misanalyses the mismatch between the size of the RIN bank and its annual RVOs by incorporating annual renewable fuel ERVOs in the calculation. EPA

[51] EPA. (2017, June 9). Annual Compliance Data for Obligated Parties and Renewable Fuel Exporters under the Renewable Fuel Standard (RFS) Program. Available at https://www.epa.gov/fuels-registration-reporting-and-compliance-help/annual-compliance-data-obligated-parties-and.

[52] "Carryover RIN Bank Calculations for 2018 NPRM." Memorandum from Nick Parsons to docket EPA-HQ-OAR-2017-0091.

[53] EPA. "Annual Compliance Data for Obligated Parties and Renewable Fuel Exporters under the Renewable Fuel Standard (RFS) Program." https://www.epa.gov/fuels-registration-reporting-and-compliance-help/annual-compliance-data-obligated-parties-and. Accessed Aug. 11, 2017.

does not set RVOs for exporters in its annual rules; exporters incur the ERVOs because exported renewable fuel does not meet the RFS program's goals. Since September 2014, exporters have been required to retire RINs and meet their ERVOs within 30 days of exporting the fuel.[54] *Exporters therefore are not allowed to carry forward deficits from year to year.*[55] While exporters are permitted to use carryover RINs to meet up to 20 percent of their ERVOs, the practice undermines the goals of the RFS – it encourages export of biofuels rather than use in the United States. As EPA notes, the RIN bank is maintained by using carryover RINs before they expire and replacing them with current year RINs.[56] Use of carryover RINs to satisfy ERVOs encourages exports as a method to use carryover RINs and increase availability of current year RINs. Available evidence does not support EPA's policy preference to preserve carryover RIN banks for compliance with ERVOs.

Despite these flaws in 2012–2015, EPA's estimate of the 2016 carryover RIN bank is reasonably accurate, since the Agency does not include ERVOs but appropriately counts deficit carryforwards (which have not been reported yet as part of 2017 RINs retired).

However, EPA should not count its full settlement with Chemoil as a reduction in the number of 2016 RINs available for compliance.[57] The consent decree requires Chemoil to retire 65 million D4 RINs (not the 75 million EPA counts in the proposed rule); it permits Chemoil to retire 2014 and 2015 vintage D4 RINs to meet the terms of its settlement.[58] Some 11.5 million 2014 vintage and 3.8 million 2015 vintage D4 RINs are set to expire unused, and, at most, only 50 million 2016 vintage RINs are needed by Chemoil. It should also be noted that Chemoil's alleged ERVO infractions occurred in 2011, 2012 and 2013; during those years 27.5 million D4 RINs expired unused.

The 2016 RIN bank will be reduced by an additional 500 million RINs to remediate EPA's improper use of the general waiver for the 2016 overall RVO.[59]

b. The RIN bank is larger than it needs to be.

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[54] 40 CFR § 80.1430.

[55] 40 CFR § 80.1427.

[56] 82 Fed. Reg. 34213, fn. 16, July 21, 2017.

[57] *United States v. Chemoil Corp.*, Case No. 4:16-cv-05538, Docket No. 7 (N.D. Ca. Dec. 5, 2016). .

[58] *Ibid.*

[59] *ACEI v. EPA*, No. 16-1005, Docket No. 1686284 (D.C. Cir. July 28, 2017).

EPA estimates that the bank of 2016 carryover RINs will reach 10.7 percent of the 2017 RVO. The Agency also projects that the bank of carryover 2017 RINs will represent the same percentage of the 2018 RVO.[60] EPA fails to explain why it chose this percentage – and not a lower percentage – for its "programmatic buffer." Additionally, EPA's choice is misinformed by incorrect data.

In its calculations, EPA notes that the bank of 2016 D4 RINs exceeds the 20 percent limit on the use of carryover RINs for the 2017 biomass-based diesel RVO. The Agency also calculates that the number of available 2016 advanced biofuel RINs (D3, D4, D5, D7) exceeds 18 percent of the 2017 advanced biofuel RVO, coming close to the limit. The number of available advanced biofuel carryover RINs could be as high as 855.5 million, according to EPA's website, which reaches the 20 percent limit.[61] If EPA reduces the 2018 advanced biofuel RVO to 4.24 billion and keeps the biomass-based diesel RVO at 2.1 billion as proposed, and the same number of carryover RINs are available for 2018 as the Agency projects, then both biomass-based diesel and advanced carryover RINs will exceed the 20 percent limits for their respective RVOs for 2018. The Agency fails to explain why a number of carryover RINs that exceeds the number that can actually be used – and represents volumes of biofuel that the Agency waived from the obligation – is necessary as a programmatic buffer.

EPA should not build or maintain a RIN bank as a programmatic buffer given the existence of alternative compliance flexibilities devised by Congress. Obligated refiners and importers may elect to carry forward deficits from year to year, as EPA notes. But obligated parties have not had to rely on this flexibility, because of EPA's improper waiver of the annual obligations since 2014, combined with its policy preference for creating overly large RIN banks. Table 2 below compares refiners' and importers' combined reports of carryforward deficits to annual reported RVOs and to annual reported retirement of RINs. The total RINs retired exclude those reported by exporters, since they are not part of the annual RVOs. EPA must finalize the 2018 RFS rule in a way that considers and reflects this flexibility as a potential buffer for the program. Not doing so would continue to improperly set the Agency's policy preference above Congress' design.

[60] "Carryover RIN Bank Calculations for 2018 NPRM." Memorandum from Nick Parsons to docket EPA-HQ-OAR-2017-0091.
[61] EPA. Fuels Registration, Reporting, and Compliance Help, 2016 Renewable Fuel Standard Data. https://www.epa.gov/fuels-registration-reporting-and-compliance-help/2016-renewable-fuel-standard-data. Data are current as of July 10, 2017. Accessed Aug. 14, 2017.

Table 2: Comparing Reported RVOs and RIN Retirements to Reported Annual Deficits

Compliance Year	Reported Overall RVO	Reported Total RINs Retired	Reported Deficits Carried Forward	Overall Deficit as % of RVO	Overall Deficit as % of RINs Retired
2013	16,847,826,477	16,882,383,632	68,855,617	0.41	0.41
2014	16,270,209,399	16,135,402,984	168,619,208	1.04	1.05
2015	17,186,141,360	17,295,611,908	10,418,768	0.06	0.06
2016	18,198,587,168	17,703,682,011	390,480,824	2.15	2.21

Finally, the Agency notes that its estimate of available carryover RINs in the 2017 final rule fell short due to a later decision to grant small refineries a hardship exemption for 2016, preserving approximately 390 million 2016 RINs.[62] Here, EPA fails to account for the existence of programmatic buffers and flexibilities that Congress designed, appearing to prefer its own program design.

IV. EPA Must Use a Forward-Looking Methodology to Estimate Liquid Cellulosic Biofuel Production

EPA must update its methodology to finalize the 2018 RFS with a more accurate level of projected cellulosic production. Much of the liquid cellulosic biofuel production applying to come online during 2018 will use proven technology with a track record of production. EPA's analysis of the cellulosic industry's past projections does not support the Agency's proposed changes to the percentile rates for 2018. The analysis does not give sufficient weight to the industry's progress over the past 12 months. Potential gallons in 2018 will come from proven plants and technologies and will in many cases require far less capital than past cellulosic production projects.

a. EPA should not employ a backward-looking approach

While EPA states that it is using an appropriately neutral methodology to set the 2018 cellulosic RVOs, it is not doing so as a practical matter. The proposed rule adjusts the percentiles in the agency's methodology for projecting production. However, the agency does not fully consider the reasons for the methodology's past inaccuracies.

EPA overestimated liquid cellulosic biofuel production in the final three months of 2015 and throughout 2016 "due to lower than expected production at several large

[62] 82 Fed. Reg. 34213. July 21, 2017.

scale liquid cellulosic biofuel production facilities."[63] However, it is critical for EPA to acknowledge and reflect in the 2018 methodology that the primary cause of the lower than expected production was *instability in the RFS program*, which undercut the financial health and production intentions of some companies in question.[64] EPA's proposed solution does not address the problem that EPA identifies.

The proposed rule's accounting of cellulosic biofuel net RIN generation in 2016 is flawed. The Agency cites 237,296 D7 RINs as "retired for reasons other than compliance."[65] Yet, the Agency's publicly available data shows that nearly all D7 RINs generated in 2016 were retired to demonstrate compliance.[66] EPA's assertions are impossible to verify.

BIO suggests that EPA use a methodology for determining projected cellulosic volumes that identifies individual ramp-up periods through discussions with each facility. The limited number of facilities left standing should make this a workable approach for 2018.

b. EPA should not change the percentiles in its projection

EPA acknowledges that the proposed adjustment of percentile values does not guarantee accuracy.[67] Moreover the proposed new percentiles guarantee only that cellulosic biofuel RVOs will be lower. The adjustment of the percentiles, therefore, is not neutral and therefore must be adjusted.

i. Count measurable corn fiber cellulosic ethanol among consistent producers

For 2018, the majority of the new liquid cellulosic biofuel capacity EPA expects to come online will come from measurable corn fiber cellulosic production technology. The primary challenge for these producers, as the proposed rule acknowledges, is completing the registration process.[68] EPA counts currently registered producers

[63] "Assessment of the Accuracy of Cellulosic Biofuel Production Projections in 2015 and 2016." Memorandum from Dallas Burkholder to docket EPA-HQ-OAR-2017-0091.

[64] E.g., Voegele, E. "Abengoa reportedly lays off staff at Hugoton, other US locations." Biomass Magazine, Dec. 3, 2015. http://biomassmagazine.com/articles/12637/abengoa-reportedly-lays-off-staff-at-hugoton-other-us-locations

[65] "Assessment of the Accuracy of Cellulosic Biofuel Production Projections in 2015 and 2016." Memorandum from Dallas Burkholder to docket EPA-HQ-OAR-2017-0091.

[66] EPA. 2016 Renewable Fuel Standard Data. https://www.epa.gov/fuels-registration-reporting-and-compliance-help/2016-renewable-fuel-standard-data

[67] 82 Fed. Reg. 34218, July 21, 2017.

[68] 82 Fed. Reg. 34216 at fn. 38, July 21, 2017.

using this technology as consistent producers who have generated RINs. There is no evidence; however, to suggest that newly registered producers using this technology will experience challenges or ramp-up periods longer than the existing consistent producers. Therefore, the final rule should count all producers who are expected to complete registration during 2018 as consistent producers.

EPA must avoid making a mistake in projecting cellulosic volumes in order to properly carry out its direction from Congress to set the annual RVOs in a way that will promote the development and use of these biofuels. In the final 2014-2016 rule, the Agency included cellulosic RINs generated by foreign producers in its annual RVOs.[69] Unfortunately, the Agency did not recognize all of the potential foreign producers in its proposed rule.[70] For the 2018 rule, EPA should take a forward looking approach to including production from proven technologies to avoid a similar mistake that could depress investment and growth in available cellulosic RINs.

c. EPA Must Improve the Timing and Efficiency of the Pathway Petition and Part 80 Registration Approval Processes

BIO commends EPA staff for their consistent hard work to implement the RFS and realizes that resources are and will likely remain limited. However, in order to keep up with the innovation occurring in the biofuels industry—especially in cellulosic and advanced biofuels—EPA must continue to work to create greater efficiencies in the pathway and Part 80 Registration approval processes. Simply put, lag time on these approvals makes it harder for biofuel producers to attract and maintain investment, which impacts their ability to keep pace with the increasing annual RVOs. These companies want their technologies and plants to produce RFS-qualifying gallons, and EPA must help them do so by ensuring a consistent and timely approval process.

The following describes a situation in which EPA's lag time negatively impacted potential cellulosic gallons. As the Agency explained and acknowledged, "the primary issue impacting the accuracy of [its] [cellulosic biofuel] projections in 2016 was including volumes from facilities that did not come online in 2016."[71] However, these facilities could not come online without Part 80 registration with EPA. In the longer term, there is evidence showing that EPA's delays on pathway approvals are impeding the success of the RFS program. As is shown in Figure 2 below, this is

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[69] EPA Renewable Fuel Standards for 2014, 2015 and 2016, and the Biomass-Based Volume for 2017: Response to Comments, at 551 (2015, Dec.). Available at https://www.epa.gov/sites/production/files/2015-12/d/420r15024/EPA-420-R-15-024.pdf

[70] 80 Fed. Reg. 33140 June 10, 2015.

[71] "Assessment of the Accuracy of Cellulosic Biofuel Production Projections in 2015 and 2016." Memorandum from Dallas Burkholder to docket EPA-HQ-OAR-2017-0091.

particularly the case for producers of advanced and cellulosic biofuels, which have lower greenhouse gas emissions.

Figure 2: Average Time for EPA to Address New RFS Biofuel Pathways Submitted between April 2010 and June 2016

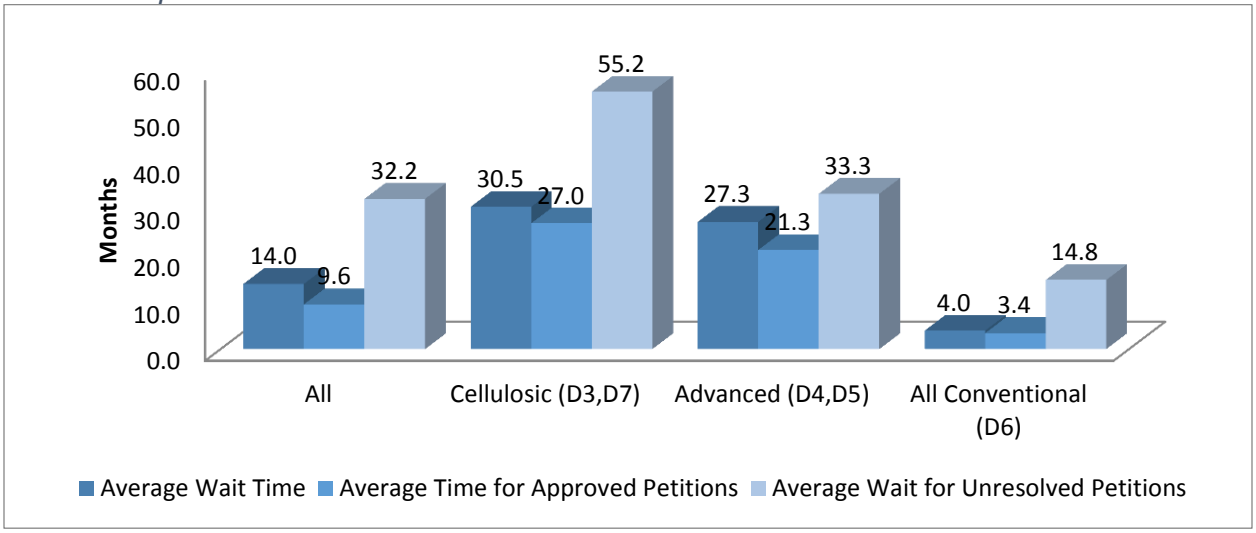

Figure 2 makes clear that average wait times for all petitions can be misleading: in particular, the average numbers mask the delays in approval decisions on RFS pathways for cellulosic and advanced biofuels. Those delays are counterbalanced by EPA's relative success in expeditiously approving a subset of conventional biofuel petitions. That success should be acknowledged; if anything, it should spur EPA to make 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 that expanded production beyond their grandfathered capacity. As of August 2017, EPA has approved 72 Efficient Producer petitions – representing 33 percent of all U.S. ethanol biorefineries. These petitions have been approved, on average, within **3 months** of their filing (measured from the date a petition was first filed). The most recent approval – for Didion Cambria – was accomplished in only 6 days.

Because Efficient Producer petitions, which represent more than 50 percent of all pathway petitions filed, have been resolved quickly, EPA has reduced the average wait time for all petitions to 14 months. For all conventional pathway petitions, the wait time has been reduced to just **4 months**. Nonetheless, for those conventional biofuel pathway petitions outside the Efficient Producer Process, the wait remains longer – **nearly 15 months**. Five ethanol producers who originally filed regular pathway petitions in 2013 and 2014 waited more than a year each, causing them to eventually withdraw the petitions. They subsequently received efficient producer approvals within months. The lag time through the regular petition process must be

shortened to allow the industry to do its job to bring the Congressionally intended annual volume levels online.

The picture is more dire for aspiring advanced and cellulosic biofuel producers, as the wait times for such producers continue to climb. There are currently 28 companies awaiting Agency response to pathway petitions, 24 of which are potential advanced or cellulosic producers. For nine of these companies, EPA has proposed a rule and solicited public comment (one of the companies is a potential conventional biofuel producer and 8 are potential advanced producers). The comment periods on five proposed rules to approve 6 of these companies' petitions closed ***two years ago*** in 2015, but EPA has taken no further action. For the remaining three companies' petitions, EPA published a proposed rule in July 2017. Two of these companies had filed their original petitions ***over four years ago***, in March 2012 and June 2013.

The average time these 9 companies waited from the date they filed their original petitions to the date EPA proposed rules to approve them was ***more than 3 years***. The wait time for final action on the proposed rules is now more than 1.5 years. This amount of lag time between the time when a company submits a petition to when final action is taken on it is untenable. Moreover, it serves to depress rather than promote the growth of the U.S. biofuels industry as Congress intended under the RFS.

In proposing to set the 2019 Biomass-Based Diesel volume at 2.1 billion gallons – the same as the final volume for 2018 – EPA states that its goal is to create competition that will draw additional advanced biofuels into the market. The Agency cites the six pending pathway rules as fuels that might potentially compete with biomass-based diesel to fill the advanced RVO.[72] If EPA does not quickly approve the six pending pathway rules, it will block this competition.

Cellulosic biofuel companies have waited on average **more than 30 months** for EPA to address their petitions for approval. For the two potential cellulosic biofuel producers whose petitions are still pending, the wait has reached **four-and-a-half years (55.2 months)**. For 14 producers whose petitions were approved, the wait time was **two-and-a-half years (27 months)**. However, among those 14 approved producers, six have abandoned plans to produce biofuels due to the impact of petition approval delay. Three additional companies simply withdrew their petitions for the same reason.

Advanced biofuel companies have waited on average **more than two years (27.3 months)** for EPA to address petitions. For the 22 potential advanced biofuel producers whose petitions are pending (including the 8 awaiting final approval of or initial action on proposed rules), the wait is nearing **3 years (33.3 months)**. Three

[72] "Draft Statutory Factors Assessment for the 2019 Biomass Based Diesel (BBD) Applicable Volume." Memorandum from Office of Transportation and Air Quality to docket EPA-HQ-OAR-2017-0091.

additional potential biofuel producers withdrew their petitions and abandoned plans to produce biofuel.

As stated above, 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 multiple years can be fatal for commercialization of new technology. Without a pathway to the fuel market, companies find it difficult to attract the investment necessary to initiate, continue, and complete the construction and startup of new facilities. Petitioners' lengthy waits for approval of new pathways discourage investment in commercial production of advanced and cellulosic biofuels. EPA must solve this problem as soon as possible, to prevent choking the path to expanded advanced biofuel volumes and cellulosic volumes. This expansion is one of the fundamental goals of the RFS.

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."[73] We urge EPA to take aggressive action on these and other fronts to expedite pathway reviews and approvals.

BIO also urges EPA to expand its definition of renewable biomass under the RFS to include trees established from natural regeneration silvicultural systems and process wood residue established from silvicultural systems. Expanding the definition of renewable biomass from naturally regenerated forest land, residues, and byproducts from milled logs and pulpwood type logs would make the U.S. Department of Energy's billion-ton study on biomass feasible.[74]

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.

[73] EPA Renewable Fuel Standards for 2014, 2015 and 2016, and the Biomass-Based Volume for 2017: Response to Comments, at 843 (2015, Dec.). Available at https://www.epa.gov/sites/production/files/2015-12/d/420r15024/EPA-420-R-15-024.pdf

[74] DOE. (2016, July). Billion-Ton Report: Advancing Domestic Resources for a Thriving Bioeconomy. Available at https://energy.gov/sites/prod/files/2016/12/f34/2016_billion_ton_report_12.2.16_0.pdf

V. EPA Should Use a Consistent Methodology to Project CNG/LNG Cellulosic Volumes

The proposed rule uses an industry wide approach rather than projecting production from each specific facility or company to project the 2018 production of CNG/LNG derived from biogas.[75] BIO opposes this new methodology, which significantly underestimates the number of RINs that can be generated from these fuels. BIO objects to a method of estimating the number of RINs by only using past data to set the CNG/LNG volumes, which is counter to the intent of the RFS as a forward looking program.

The proposed rule's methodology changes for estimating cellulosic biogas production are based on a flawed interpretation of available evidence. Further, using past production growth rates to estimate future production for an emerging industry is not a neutral methodology. EPA must use a consistent methodology for projecting both liquid and biogas cellulosic volumes.

EPA should increase advanced and cellulosic biofuel volumes under the proposed rule by returning to the methodology it used in 2017 for projecting CNG/LNG production, using the number of RINs that can be generated from these fuels on a facility-by-facility basis.

a. Reject new methodology/calculation

EPA underestimated cellulosic biogas production for the final three months of 2015 by approximately 19.8 million RIN equivalent gallons (EPA projected 33 million; net production was nearly 52.8 million). The Agency underestimated cellulosic biogas production in 2016 by approximately 19 million RIN equivalent gallons (EPA projected 207 million; net production was more than 186 million).[76] The underestimate in 2015, as the proposed rule explains, was due to accounting rules: biogas producers needed verification that their fuel was used for transportation, which did not come till early in 2016; the RINs, however, still counted as 2015 vintage. EPA must finalize the 2018 RFS rule to reflect an understanding that the underestimate in 2015 and the nearly equivalent overestimate in 2016 resulted from the exact same cause, namely, accounting of the vintage of the RINs produced. The proposed 2018 RFS rule states that the overestimate for 2016 was due to including volumes from facilities that did not come online during the year. Nonetheless, there appears to be a much simpler explanation for EPA's missed estimates that obviate changes to the methodology. In other words, EPA does not articulate a valid reason for making the change to its cellulosic biogas methodology.

Further, the proposed methodology does not remediate the problem identified by the Agency. As the proposal states, the problem is facilities failing to complete the

[75] *See* Proposed Rule at 34219

[76] "Assessment of the Accuracy of Cellulosic Biofuel Production Projections in 2015 and 2016." Memorandum by Dallas Burkholder to docket EPA-HQ-OAR-2017-0091.

Part 80 registration process and come online. The solution to that problem is, as suggested above, to expedite the Part 80 registration process. The proposed change in methodology does not flow from the evidence and data presented.

EPA proposes to place all biogas producers into a single category and project that their aggregate production will grow in 2018 at the same rate that it did between the first five months of 2016 and 2017. There is no evidence to suggest that this will improve the accuracy of EPA's methodology. In fact, the evidence presented by EPA suggests its methodology for projecting biogas production was nearly 100 percent accurate in 2015 and 2016, except for the accounting of the date of actual production and RIN generation between the final months of 2015 and first few months of 2016. EPA indicates that it has already resolved this issue.

EPA should return to the facility-by-facility methodology it used in 2016, since it is demonstrably accurate and has been approved as neutral by the Court.

VI. EPA Must Set Advanced Biofuel Volumes Higher

Once EPA reduces cellulosic volumes to the volume of projected production, the Agency has broad discretion to waive advanced and overall volumes "by the same or a lesser volume."[77] The proposed rule tests EPA's cellulosic waiver authority by unnecessarily reducing the statutory advanced RVOs for 2018, thereby setting aside Congress' overarching design and goal for the RFS to expand the use of advanced biofuels. EPA has failed to, as required, "examine the relevant data and articulate a satisfactory explanation for its [proposed] action including a rational connection between the facts found and the choice made."[78] Indeed, the proposed rule does not articulate an adequate reason for waiving advanced RVOs to what it deems an "appropriate" volume rather than the reasonably attainable volume that correctly interpreted relevant data would compel.

a. Congress intended growth in advanced biofuel volumes

EPA has consistently found that Congress' objective for the RFS is "to dramatically increase the use of advanced biofuels in the time period between 2015 and 2022."[79]

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[77] 42 U.S.C. § 7545(o)(7)(D)(i).

[78] *ACEI v. EPA*, No. 16-1005, Docket No. 1686284 at p. 63 (D.C. Cir. July 28, 2017), *See also Motor Vehicle Manufacturers Association of United States, Inc. v. State Farm Mutual Automobile Insurance Co.*, 463 U.S. 29, 43 (1983).

[79] 82 Fed. Reg. 34220, July 21, 2017. *See also*, 80 Fed. Reg. 77421, Dec. 14, 2015. EPA. Renewable Fuel Standards for 2014, 2015 and 2016, and the Biomass-Based Volume for 2017: Response to Comments. EPA-420-R-15-024, November 2015, pp.8, 528. FR 81 (89752, 89798), Dec. 12, 2016. EPA. Renewable Fuel Standard Program Standards for 2017

The Agency, without any explanation, now proposes to depart from this interpretation of Congressional intent, saying instead that Congress intended for growth "to be driven primarily by increases in cellulosic biofuel as opposed to non-cellulosic advanced biofuels."[80] This newly proposed interpretation of Congressional intent cannot be correct. In Clean Air Act § 211(o)(2)(B)(i)(II-III), Congress set a 500 million gallon increase for required volumes of undifferentiated (neither cellulosic, nor biomass-based diesel) advanced biofuel in 2018, compared to 2017.

It is not appropriate for EPA to waive requirements for advanced biofuels in order to forego the costs of commercializing new advanced biofuels; and to avoid "diverting" advanced feedstocks from other uses. The agency has previously identified sufficient availability of advanced feedstocks.[81] Further, the proposed rule fails to consider the negative impact the proposed reduced advanced volumes will have on the significant investments made by advanced biofuel producers to commercialize new fuels.

The proposed estimate of cost savings from lowering the requirement for advanced biofuels is based on flawed and inconsistent methodology.[82] EPA incorrectly assumes that the wholesale price for diesel and E10 from EIA's March 2017 Short Term Energy Outlook represents the immutable cost of producing petroleum fuels. EPA then estimates the costs of various renewable fuels using a unique model and data source for each. The comparisons are not equivalent.

DOE's Alternative Fuels Data Center (AFDC) maintains a quarterly Fuels Price Report that provides comparable cost data derived through a consistent methodology. AFDC demonstrates that various renewable fuels and renewable fuel blends are cost competitive. The retail price is more relevant to society than wholesale costs from oil refiners.

Renewable fuel producers have invested billions to commercialize new advanced renewable fuels since the inception of the RFS. Those costs are reflected in estimates of the internal rate of return, which is used by EPA in at least one of its modeled cost estimates. That is why "Congress intended the Renewable Fuel Program to be a 'market forcing policy' that would create demand pressure' to

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and Biomass-Based Diesel Volume for 2018: Response to Comments. EPA-420-R-16-019, November 2016, p. 63.

[80] 82 Fed. Reg. 34220, July 21, 2017.

[81] Renewable Fuel Standard Program Standards for 2017 and Biomass-Based Diesel Volume for 2018: Response to Comments. EPA-420-R-16-019, November 2016, p.175-176, p.219-220.

[82] "Cost Impacts of the Proposed 2017 Annual Renewable Fuel Standards." Memorandum from Michael Shelby, Dallas Burkholder, and Aaron Sobel to docket EPA-HQ-OAR-2017-0091.

increase consumption of renewable fuel."[83] EPA's proposal to determine "appropriate" volumes based on costs and hypothetical diversions of feedstocks turns Congress' design of the program on its head.

b. Imports and Exports

Since the start of the RFS program, EPA has held that biofuel imports contribute to the goals of the RFS program, as Congress intended. The Agency reaffirmed that position in its 2017 RFS rule, stating that "[s]etting the RFS standards with the intent of limiting renewable fuel imports could therefore conflict with furthering the goals of the Act."[84] The Agency now proposes to reverse its prior holdings in order to minimize the program's incentives for feedstock switching.

The proposed rule presents data from EPA's DART interface for the EPA Moderated Transaction System (EMTS) showing that biomass-based diesel imports have grown each year since 2013, with a significant increase in 2016. The presentation of the data also shows that exports of biomass-based diesel counterbalance some portion of the imports. The proposal does not show data from the DART interface on exports of all biofuels. Ethanol exports have also grown considerably since a low point in 2013.[85] Consideration of the overall balance of exports and imports of all biofuels would lead EPA to conclude once again that limiting imports conflicts with the goals of the program.

EPA requests comment on waiver authorities it might use to reduce biofuel imports.[86] However, EPA provides no evidence to establish severe economic or environmental harm from imports under the general waiver. EPA set the biomass-based diesel volume above the statutory level for 2018, so has not invoked the biomass-based diesel waiver. The cellulosic waiver allows only reduction by the same amount. Therefore, EPA should not exercise any "waiver authority" to reduce biofuel imports.

c. Market Constraints

EPA appears to be concerned that increased advanced biofuel requirements would "be satisfied through a redirection of advanced feedstocks from competing uses,

[83] *ACEI v. EPA*, No. 16-1005, Docket No. 1686284 at p. 21 (D.C. Cir. July 28, 2017).

[84] Renewable Fuel Standard Program Standards for 2017 and Biomass-Based Diesel Volume for 2018: Response to Comments. EPA-420-R-16-019, November 2016, p.413.

[85] U.S. Energy Information Administraiton. Petroleum & Other Liquids. U.S. Exports of Fuel Ethanol.

[86] 82 Fed. Reg. 34212, July 21, 2017.

leading to lower overall GHG emission benefits."[87] The Agency has conducted lifecycle analyses –including assessments of land use change, or "diversion" – for every fuel feedstock and process pathway listed in Tables 1 and 2 to 40 CFR § 80.1426, as well as for the pathway assessments pursuant to 40 CFR § 80.1416. It has found that each approved biofuel meets the Congressionally established goals for GHG reductions. EPA acknowledged its same concerns about "feedstock diversion" in setting the 2017 RVOs and 2018 biomass-based diesel volume, but found no adverse GHG emission impact and determined that feedstock supplies were adequate.[88]

EPA presents no new evidence to substantiate its apparent concern that increased advanced biofuel volumes will divert feedstocks from other uses, despite its statement that it conducted a "comprehensive consideration of these factors."[89] The Agency does not cite a single source for this claim and does not allow the opportunity for public comment.

Elsewhere in the proposed rule, EPA states that feedstocks would be sufficient to increase production of biomass-based diesel in 2018, compared to 2017.[90] In July 2017, the Agency determined that yellow grease used for home heating oil qualifies as an advanced biofuel.[91] The Agency did not mention feedstock diversion in its determination. We agree with EPA's findings that "the ability for the market to distribute and use biodiesel and renewable diesel are therefore not constraining factors."[92] Evidence now available to EPA – notably EPA's own data on refiner and importer compliance with the RFS – demonstrates that the blendwall has never been a constraint on the market.[93] The biggest constraints on the market for advanced biofuels continue to be EPA's delays in approving new pathways and RVOs set too low.

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[87] 82 Fed. Reg. 34221, July 21, 2017.

[88] EPA. Renewable Fuel Standard Program Standards for 2017 and Biomass-Based Diesel Volume for 2018: Response to Comments. EPA-420-R-16-019, November 2016, pp. 219-220.

[89] 82 Fed. Reg. 34221 at fn. 55).

[90] 82 Fed. Reg. 34226, 34234, July 21, 2017.

[91] Homestead Determination Letter, July 10, 2017. https://www.epa.gov/renewable-fuel-standard-program/homestead-determination-letter.

[92] 82 Fed. Reg. 34224, July 21, 2017.

[93] *See* Appendix B – Disproving the Existence of the Blendwall. Winters, P. (2017) "A new question worth billions: why did RIN prices spike in 2013?" Biofuels. 17 July 2017. Doi: 10.1080/17597269.2017.1345358.

Since the 2014-2016 rule, EPA has promoted "competition between BBD and other advanced biofuels (including imported advanced biofuels) to satisfy the advanced biofuel volume standard. We believe that this competition will also help to encourage, over the long term, the development and production of a variety of advanced biofuels."[94] As described above, EPA's miscalculations and use of flawed data hinder competition and discourage production of additional advanced biofuels, undercutting EPA's goal. Table 3 below demonstrates that EPA has severely limited opportunities for advanced biofuels other than biomass-based diesel by setting the advanced RVO too low. The available biomass-based diesel (BBD) RINs are taken from Table VI.B.1-1 in the rule.[95] All other figures are from EPA's compliance data.[96]

Table 3: Comparing Opportunities for "Other Advanced" Biofuels with Actual RIN Use

Year	Advanced RVO	BBD RVO	Opportunity for "Other Advanced"	Available BBD RINs	Retired D4 RINs	Retired D5 RINs
2011	1,308	1,157	151	1,522	1,252	174
2012	2,016	1,516	500	1,545	1,577	481
2013	2,802	1,955	848	2,514	2,254	670
2014	2,673	2,496	177	2,484	2,587	130
2015	2,925	2,690	235	2,619	2,734	101
2016	3,622	2,865	757	3,753	3,162	184

d. EPA misinterprets the impact of tax credits

BIO urges EPA not to consider any impact of the expiration of tax credits on the biofuels industry in setting the final 2018 RFS rule. While sustained supportive tax policy is very important to emerging technologies that have not yet achieved commercial scale, and should be targeted at those technologies with the greatest potential to create the jobs, economic growth, energy security and environmental benefits we seek as a nation; availability of these credits should not be taken under consideration by EPA here. The uncertain cycle of expirations and reinstatements for tax incentives for biodiesel and renewable diesel, as well as advanced and cellulosic biofuels, makes it difficult for the industry to take advantage of these tax incentives that could help move these projects to commercial production by attracting investment and reducing the cost of production. BIO has long supported

[94] 80 Fed. Reg. 77494, Dec. 14, 2015.

[95] 82 Fed. Reg. 34239, July 21, 2017.

[96] EPA. "Annual Compliance Data for Obligated Parties and Renewable Fuel Exporters under the Renewable Fuel Standard (RFS) Program." https://www.epa.gov/fuels-registration-reporting-and-compliance-help/annual-compliance-data-obligated-parties-and. Accessed Aug. 17, 2017.

a suite of tax incentives important for the development of advanced and cellulosic biofuels – the Second Generation Biofuel Producer Tax Credit (PTC), the Special Depreciation Allowance for Second Generation Biofuel Plant Property, the Biodiesel and Renewable Diesel Fuels Credit, and the Alternative Fuel Vehicle Refueling Property Credit. Unfortunately, the PTC and associated depreciation provisions have never been enacted for a sufficient length of time to allow investors to depend upon their existence once the facilities are eventually placed in service.[97]

Relying on historic data with regard to tax policy is particularly fraught with uncertainty in the current political climate. EPA should set a target that will incentivize the production of biodiesel and renewable diesel regardless of the status of this tax credit.

Moreover, even if considering tax credits was appropriate, which it is not, the proposed rule's analysis of the impact of biodiesel tax credits is flawed. It is not that available BBD RINs in 2012 fell below the BBD standard.[98] Table 4 below compares EPA's different estimates of available BBD RINs – one from its draft statutory analysis for the 2019 BBD volume, another from its assessment in the rule, and a third from the compliance reports of obligated parties.[99] The purported correlation between BBD RIN availability and years when the biodiesel tax credit was in effect at the start of the year falls apart when EPA corrects its assessment of available RINs for 2012. A better predictor of the availability of BBD RINs is the stability and predictability of the RFS program.

Table 4: Comparing "Available" BBD RINs to BBD RINs Retired for Compliance

Year	Available BBD RINs (Draft Statutory Factors Assessment)	Available BBD RINs (Table VI.B.1-1)	Retired BBD RINs (EPA Compliance Website)
2011*	1,483	1,522	1,472
2012	1,465	1,545	1,547
2013*	2,341	2,514	2,501
2014	2,492	2,484	2,477
2015	2,631	2,619	2,617
2016*	3,753	3,753	2,893**

* BBD tax credit years.

[97] *See* Proposed Rule at 34225

[98] "Draft Statutory Factors Assessment for the 2019 Biomass Based Diesel (BBD) Applicable Volume." Memorandum from Office of Transportation and Air Quality to docket EPA-HQ-OAR-2017-0091.

[99] 82 Fed. Reg. 34239, July 29, 2017. Table VI.B.1–1—Biomass-Based (D4) RIN Generation and Standards in 2011–2018. EPA. Annual Compliance Data for Obligated Parties and Renewable Fuel Exporters under the Renewable Fuel Standard (RFS) Program. https://www.epa.gov/fuels-registration-reporting-and-compliance-help/annual-compliance-data-obligated-parties-and.

** does not include 807 million D4 RINs still available for carryover to 2017. Total would be 3,700.

e. Other Advanced Biofuel

BIO encourages EPA to modify its projection of 60 million gallons for other advanced biofuels in the final rule. EPA rightly recognizes that potential exists for additional volumes of advanced biofuel from sources such as jet fuel, naphtha, heating oil, butanol, and domestically-produced advanced ethanol.

The development of alternative jet fuels from biofuels represents one of the fastest growing spaces in the sector. To date, there have been 2,500 commercial flights flown on sustainable alternative fuels. There are now five certified pathways to produce drop-in jet fuels with three airports, including Los Angeles International Airport distributing alternative fuels to regular flights.[100]

With the worldwide aviation sector committing to a global framework on aviation and climate change under the United Nations body that sets standards and recommended practices for international aviation, the International Civil Aviation Organization (ICAO), to reduce greenhouse gas emissions in its sector by 50 percent by 2050 relative to 2005 levels, there will be rapid growth in this sector.[101] ICAO gathers news and activities related to alternative fuels for aviation, which can help identify projects both foreign and domestic in the jet fuel space that could become available this year.[102]

According to BNEF, $3.1 billion has been promised in aviation biofuel off-take agreements between 2016 and 2026. This revenue could double if the biofuel suppliers and blenders are able to take advantage of RFS 2 subsidies in the U.S. By the end of 2017, when Fulcrum, Red Rock, and Diamond Green Diesel expect to add capacity, there is the potential for 1.5 billion gallons of renewable jet fuel capacity, produced via certified pathways.[103]

As discussed, EPA can bring additional gallons of advanced biofuel to market by working to overcome barriers to pathway approvals. Last year, an initial

[100] UN ICAO Information Page. Available at https://www.icao.int/environmental-protection/GFAAF/Pages/default.aspx

[101] Airlines for America (A4A) Information Page. A4A's Climate Change Goals. Available at http://airlines.org/a4as-climate-change-commitment/

[102] ICAO News and Activities Page. (2017). ICAO Global Framework for Aviation Alternative Fuels. Available at https://www.icao.int/environmental-protection/GFAAF/Lists/SAAFA/SAAFA.aspx

[103] Curry C., Fanele Z., Grant, A., & McLaughlin, D.(2017, Jan. 20). Next-Generation Biofuel Update, Aviation biofuel takes-off.Bloomberg New Energy Finance, *See* Pg. 21-23.

interagency draft of the proposed REGS rule included language that would explicitly expand the Agency's interpretation of the term "algae" to include microorganisms and bioprocesses that perform similar carbon capturing functions to algae and cyanobacteria, including autotrophic organisms. [104] However, this language was not included in the published form of the proposed rule. As was noted during the interagency review process, explicit expansion in this manner of EPA's interpretation of "algae" would be well within EPA's authority, would be well received, and would be seen as a means to make available additional feedstock for renewable fuel production, which will further the energy independence and greenhouse gas reduction objectives of the RFS statute and program."[105] For these reasons, we urge EPA to proceed with a separate request for comments on explicitly including autotrophic organisms as renewable biomass under algae, using the recommended language proposed for consideration during the interagency process.

VII. EPA Must Increase Projected Total Volumes

a. EPA should eliminate consideration of the blendwall from its analysis

EPA acknowledges that "the E10 blendwall is not the barrier that some stakeholders believe it to be." Nonetheless, the Agency asserts that its 2015 analysis of "the factors that constrain growth in ethanol supply" "remains relevant for 2018" RVOs.[106]

EPA's analysis of the blendwall is irrelevant due to the emergence of new facts regarding compliance between 2013 and 2016 and the relative amounts of ethanol blended into obligated volumes of gasoline in those years. EPA's 2015 analysis relied on projections of demand for gasoline and ethanol; the Agency has begun to adopt use of the compliance data in its analysis (e.g., in its estimate of the carryover RIN bank). It is now apparent that obligated parties have blended ethanol into gasoline above the 10 percent level since before 2012. Appendix B "Disproving the Existence of the Blendwall," and Appendix C "A new question worth billions: why did RIN prices spike in 2013," attached to this document demonstrate that the blendwall has not been a barrier to the RFS program. They can be read to show

[104] EO12866 Review of EPA Renewables Enhancement and Growth Support Proposed Rule 2060-AS66- 6 21 2016 EPA-HQ-OAR-2016-0041 (Nov. 16, 2016). Available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2016-0041-0013

[105] EO12866 Summary Comments on EPA Renewables Enhancement and Growth Support Proposed Rule 2060-AS66- 6 21 2016 EPA-HQ-OAR-2016-0041 (Nov. 16, 2016). Available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2016-0041-0013

[106] 82 Fed. Reg. 34230, July 21, 2017.

that the biggest barrier to achieving higher volumes of ethanol use since 2013 has been EPA's delays and incorrect use of waivers of required volumes. [107]

The proposed rule estimates large E0, E15 and E85 demand via two separate memoranda to the docket that in turn reference multiple additional memoranda. The proposed estimates are unnecessary; further, they do not employ a consistent methodology for estimating use of each fuel type, resulting in a high degree of uncertainty for the results. For instance, the proposed rule estimates that 193 million gallons of E85 were sold in 2016.[108] By comparison, EIA estimates E85 use at 320 million gallons for 2016.[109] The proposed rule does not provide statistical evidence to support its choice of the fraction of E15 sold at gas stations.[110] Similarly, the proposed rule does not adequately support the estimate of E0 use as the remainder of nationwide gasoline sales, after the use of retired ethanol RINs is considered.

The proposed rule's use of 2016 data for estimating 2018 volumes of E85 and E15 is also problematic, given the increase in stations selling both blends (3,864 E85 stations and 559 E15 stations).[111] At the same time, gasoline demand remains high and is projected to rise in 2018, according to EIA, enlarging the market for all fuels.

Further, EPA fails to exclude from its calculations demand for gasoline and ethanol in Alaska, which does not participate in the RFS. Demand for E0 in Alaska is not relevant to the program and should not be considered by EPA when establishing annual RVOs. Relative ethanol use in Alaska, however, proves that demand for E0 is not a barrier to accomplishing the goals of the RFS. There are no stations in Alaska selling E85 or E15, but perhaps one or more selling E0.[112] Even so, according to EIA, Alaska blends ethanol into its gasoline at a rate exceeding 10 percent, just as the rest of the nation as a whole does. According to EIA's State Energy Data System, Alaska used 6,488,000 barrels of gasoline in 2015, which

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[107] See Appendix B – BIO Disproving the Existence of the Blendwall. See Appendix C – Winters, P. (2017) "A new question worth billions: why did RIN prices spike in 2013?" Biofuels. 17 July 2017. Doi: 10.1080/17597269.2017.1345358.

[108] "Preliminary estimate of E85 consumption in 2016." Memorandum by David Korotney to docket EPA-HQ-OAR-2017-0091.

[109] EIA, Annual Energy Outlook 2017, Petroleum and Other Liquids Supply and Disposition.

[110] "Estimate of E0 use in 2016. (Nov. 18, 2016)." Memorandum from David Korotney, Office of Transportation and Air Quality (OTAQ), USEPA; to USEPA Air Docket EPA-HQ-OAR-2016-0004; regarding Ethanol Consumption in 2015 and Estimates of E0 Use.

[111] E85 Prices. Available at https://e85prices.com/e85map, Accessed Aug. 10, 2017.

[112] E85 Prices map. Available at https://e85prices.com/e85map; Pure-gas. Available at https://www.pure-gas.org/index.jsp?stateprov=AK. Accessed Aug. 10, 2017.

included 672,000 barrels of ethanol, or 10.4 percent.[113] Even without the RFS – or demonstrated demand for specific fuel blends – it is clear that the so-called blendwall is no barrier to the use of ethanol in Alaska's transportation fuel. It therefore cannot be a barrier for the rest of the nation.

The proposed rule does not present consistent data measuring demand for relative fuel mixtures. The Agency should not use the estimate of demand for E0 in its consideration of the annual RVOs.

VIII. Small Refiner Exemptions and RIN Market Transparency

EPA requests comment on improving RIN market transparency and structural elements of the rules that may provide an opportunity for RIN market manipulation.[114] Separately, EPA requests comment on accounting for small refiner hardship exemptions in setting annual percentage standards for 2018. BIO supports greater transparency in the RIN markets. In particular, **BIO encourages EPA to report daily the aggregate number of RINs sold in each category (D3, D4, D5, D6, D7) as reported in EMTS.**

a. BIO Supports Greater Transparency

As previously noted, EPA delayed compliance deadlines for the 2013, 2014 and 2015 RVOs, keeping the 2016 deadlines on the statutory schedule. The deadlines are shown in Table 5 below. The prices reported for 2013–2017 vintage D4, D5 and D6 RINs are shown in Figure 3 below. As the deadlines for each year passed during 2016, prices rose steadily. Some price volatility occurred around the compliance and attest engagement deadlines for 2014 and 2015, primarily reflected in price drops for advanced biofuels RINs. The price increase might be expected in a market driven by supply and demand, since the supply of RINs was shrinking with each compliance deadline. The large price decreases for advanced biofuel RINs around the compliance deadlines likely reflects the fact that EPA has set advanced biofuel RVOs too low, creating a superabundance of carryover RINs.

The volatility around the 2014 attest engagement and 2015 compliance demonstration deadlines was also likely the result of the announcement of the 2017 RVOs, reflecting speculation in the market.

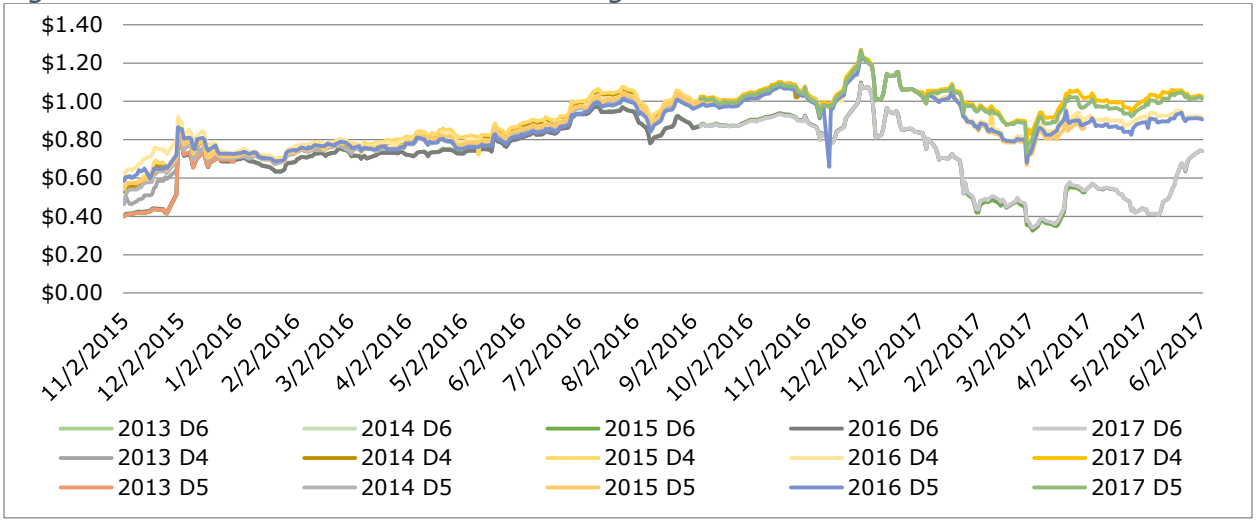
[113] EIA, State Energy Data System (SEDS): 1960-2015 (complete), Tables CT7 and F4, June 30, 2017.

[114] 82 Fed. Reg., 34211. July 21, 2017.

Table 5: Compliance Deadlines 2013-2016

Compliance Year	Obligated Party Compliance Deadline	Attest Engagement Deadline
2013	March 1, 2016	June 1, 2016
2014	Aug. 1, 2016	Dec. 1, 2016
2015	Dec. 1, 2016	March 1, 2017
2016	March 31, 2017	June 1, 2017

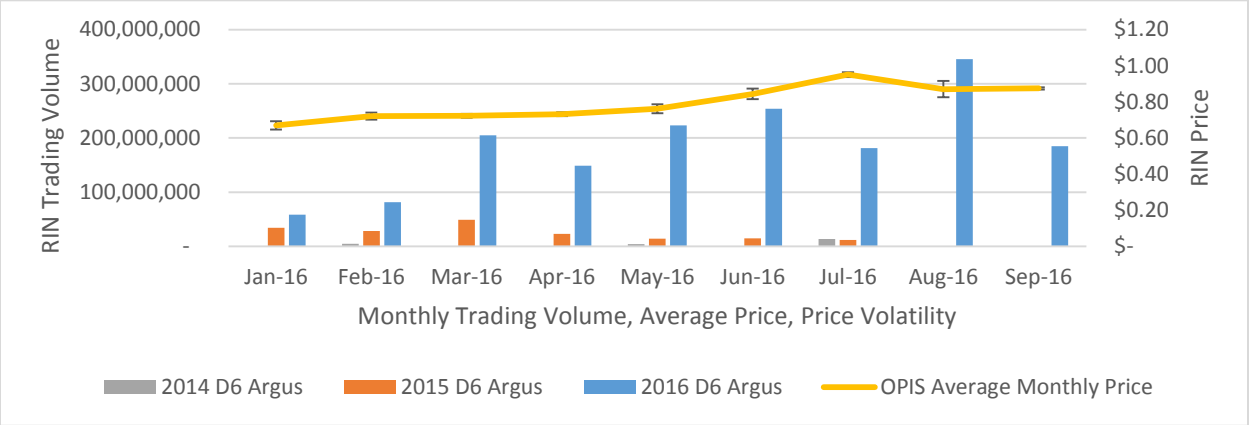
Figure 3: RIN Prices for 2013-2017 Vintages



Transparency in the RIN market would be greatly improved by regular reporting of volumes sold along with the prices paid. As an example, in a briefing filed with the U.S. Circuit Court of Appeals in the case *Americans for Clean Energy v. EPA*, EPA presented evidence that "obligated parties have been able to obtain RINs in the marketplace throughout 2016, and that large volumes of RINs have been traded."[115] Data presented from the EPA Moderated Transaction System demonstrate a steady volume of RIN transactions each month between January and September 2016. This data is sufficient to show that the market functioned as intended to make RINs available to obligated parties who needed them for compliance. BIO further correlated the volume of monthly trades presented by EPA with average monthly prices and price differentials published by Oil Price Information Service. The correlation for D6 RINs, shown in Figure 4 below, corroborates EPA's finding that the RIN markets functioned as intended to provide sufficient RINs at prices sensitive to demand.

[115] "Declaration of Paul Machiele." *ACEI v. EPA.* Case No. 16-1005, Docket No. 1645849 (D.C. Cir. Nov. 14, 2016).

Figure 4: Monthly RIN Trading Volumes, Average Price and Price Differentials for D6 RINs in 2016



b. Accounting for small refinery exemptions

EPA seeks comment on how to account for small refinery exemptions under 40 CFR § 80.1405. BIO notes that neither Congressional direction under the Consolidated Appropriations Act of 2017 (PL 115-31) nor the judiciary's opinion in *Sinclair v. EPA* requires a reevaluation of the rules under 40 CFR § 80.1405.[116] Indeed, less than a year ago, in September 2016, EPA reaffirmed its long-standing methodology for setting the annual standards under § 80.1405.[117]

EPA should not change the formulas in 40 CFR § 80.1405. In this formula, the Agency should continue to count only the small refinery exemptions (or 50 percent exemptions now permitted) granted prior to finalizing the annual rule.

IX. Conclusion

The advanced and cellulosic biofuels industry are poised for rapid growth in 2018 if the final 2018 RFS rule includes the necessary changes from the proposed version to allow these producers access to the transportation fuel market.

When allowed to work, the RFS has enabled billions of dollars of investment in new technologies that have led to the rapid growth of the renewable fuels industry and the biobased economy. This benefits our nation's economic and energy security.

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[116] *Sinclair v. EPA*, No. 16-9532 (10 Cir. Aug. 15, 2017).

[117] EPA. (2016, Sept.) Response to Petitions of the American Petroleum Institute, American Fuel and Petrochemical Manufacturers, and Monroe Energy LLC for Reconsideration of Portions of the 2013 Renewable Fuel Standards Annual Rule. Available at https://www.epa.gov/renewable-fuel-standard-program/epas-final-action-denying-petitions-reconsideration-2013-renewable.

The growth of the biofuels industry has bolstered our rural communities and provided agriculture producers stable commodity markets. To continue this success and bring even greater job growth to rural America, the final rule for the 2018 RFS should not arbitrarily limit growth of advanced and cellulosic biofuels industry.

To make this possible, EPA must reject its new methodology of forecasting gallons under the cellulosic waiver and return to a forward-looking forecasting methodology that considers current market activity. EPA should also not limit advanced and overall volumes by reducing them at the same levels as the cellulosic biofuels market. EPA can help ensure that additional gallons of advanced and cellulosic biofuels will be available by expediting pathway approvals and adjusting its treatment of carryover RINs.

We respectfully urge the Agency to work with us and other stakeholders to make the recommended changes laid out in our comments. Stable implementation of the RFS in line with the statutory requirements can help drive the growth of the advanced and cellulosic biofuels industry. The result will be to spur the development of new investment, innovation, and job growth; and to enhance energy and national security.

We look forward to working with you toward these goals. Thank you for considering these comments.

Sincerely,

Brent Erickson
Executive Vice President
Industrial and Environmental Section