Biotechnology Innovation Organization

April 29, 2019

The Honorable Andrew Wheeler
Administrator, Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20460
Docket ID No. EPA-HQ-OGC-2018-0775

Dear Administrator Wheeler:

The Biotechnology Innovation Organization is pleased to provide comment on the U.S. Environmental Protection Agency's (EPA) proposed rulemaking for Modifications to Fuel Regulations to Provide Flexibility for E15 and to Elements of the Renewable Identification Number Compliance System[1] (proposed rule).

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.

BIO is supportive of EPA's proposed regulatory changes to allow gasoline blended with up to 15 percent ethanol (E15) to take advantage of the 1-pound per square inch (psi) Reid Vapor Pressure (RVP) waiver that currently applies to E10 during the summer months. BIO recognizes the time constraints EPA is working under, but it urges the agency to expedite its review of the proposed rule to ensure E15 will be available when the summer driving season begins on June 1.

With respect to EPA's proposed regulatory changes to modify certain elements of the renewable identification number (RIN) compliance system under the Renewable Fuel Standard (RFS) program, EPA should not significantly alter the RIN markets to address unproven fears of market manipulation.

[1] Environmental Protection Agency, Notice of Proposed Rulemaking for Modifications to Fuel Regulations to Provide Flexibility for E15 and to Elements of the Renewable Identification Number Compliance System, EPA-HQ-OGC-2018-0775, 84 Fed. Reg. 10584 (Mar. 21, 2019), Available at: https://www.epa.gov/renewable-fuel-standard-program/notice-proposed-rulemaking-modifications-fuel-regulations-provide

I. Extension of the 1-psi Waiver to E15

BIO is supportive of EPA's proposal to adjust the volatility requirements for E15 during the summer season[2].

a. Section 211(h) Reinterpretation

BIO supports EPA's proposed revised interpretation of Section 211(h)(4) of the Clean Air Act (CAA) that extends the 1-psi waiver to E15[3].

b. Substantially Similar Approach

BIO supports EPA's *Proposed Interpretation of "Substantially Similar" for Gasoline*[4] to find that E15 is "substantially similar" (sub sim) to E10. We support EPA's findings that E15 at 10.0 psi RVP is sub sim to Tier 3 E10 certification test fuel at 9.0 psi RVP with respect to emissions, materials compatibility, and drive-ability[5]. EPA's has already found that E15 causes no material compatibility or drivability issues for Model Year (MY) 2001 and later light duty vehicles. This justifies a determination that E15 is substantially similar to E10 – and even E0 – when used in MY 2001 and later light duty vehicles. BIO agrees with EPA's overall conclusion that any tailpipe emissions difference between E15 and E10 is at most slight[6]; however, BIO contends with the increase use of biofuels replacing petroleum based components will burn cleaner and decrease engine tailpipe emissions.

BIO's analysis of the Consumer and Fuel Retailer Choice Act of 2017 to extend the RVP waiver to E15 found over the next 10 years, summertime use of E15 can save a minimum of 7 million to 10.4 million metric tons of CO_2 equivalent greenhouse gas emissions. These savings are equal to taking 1.4 million to 2.2 million cars off the road over that same time period[7].

The Environmental and Energy Study Institute (EESI) analysis of the Consumer and Fuel Retailer Choice Act found that increasing ethanol content from E10 to E15 reduces harmful volatile organic compound emissions, displaces cancer-causing emissions, and reduces smog-forming potential[8]. 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

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[2] 10586
[3] 10586
[4] 10596
[5] 10600
[6] 10599
[7] Biotechnology Innovation Organization, "GHG Benefits of the Consumer and Fuel Retail Choice Act." Washington, DC. BIO, (Jun. 2017) Available at https://www.bio.org/sites/default/files/GHG%20Benefits%20of%20the%20Consumer%20and%20Fuel%20Retailer%20Choice%20Act%20June%202017%20%28002%29.pdf
[8] Stolark, J. "Fact Sheet - The Consumer and Fuel Retailer Choice Act Environmental, Health & Consumer Considerations." Environmental and Energy Study Institute. (Sep. 18, 2017). Available at https://www.eesi.org/papers/view/fact-sheet-the-consumer-and-fuel-retailer-choice-act#4

fallen during the period in which ethanol blending increased.[9] Additional data from the University of Illinois-Chicago show substantial reductions in particulate matter (PM) and benzene with the addition of ethanol.[10] Biofuels have also been shown to reduce emissions of nanoparticles, polycyclic aromatic hydrocarbons (PAHs), and alkyl- and nitro- PAHs. As reported by the EESI, the Swiss Federal Laboratories compared emissions from a flex-fuel vehicle when fueled with E0, E10, and E85. The study found both E10 and E85 reduced particulate matter emissions by more than 95 percent when compared with E0, providing a substantial health benefit. In addition, PAH emissions from E10 gasoline were 67-96 percent lower than E0, while PAH emissions from E85 were 82-96 percent lower than E0. The relative toxicity of these emissions also decreased – 72 percent lower with E10 and 83 percent with E85. These results suggest that switching to higher ethanol blends in our gasoline can have positive effects for human health, as well as the positive effects on greenhouse gas emissions.[11]

Further, we believe EPA is correct to anticipate that providing the flexibility to use E15[12] at 10.0 psi RVP in the summer could help incentivize more retailers to introduce E15 and increase volumes under the RFS helping to increase the consumption of advanced and cellulosic biofuels and fulfill the goals of the RFS. Ethanol is a low-cost additive. Increased use of ethanol can help combat gasoline prices which typically rise at the start of summer, as refineries switch to production of summer-grade gasoline, providing retailers an incentives to include E15 as an option for consumers.

Researchers from the University of Illinois Department of Agricultural and Consumer Economics calculated that increasing use of ethanol to 10 percent in gasoline saved U.S. consumers $7 billion between 2008 and 2016.[13] Using a similar model – calculating both the price difference between ethanol and gasoline blendstock and the price difference between ethanol and other octane additives – BIO calculates that the switch from E10 to E15 can save U.S. drivers $9.5 billion per year.

c. Conditions on EPA's Proposed Sub Sim Interpretive Rule

BIO does not oppose an EPA interpretation that E15 is sub sim to E10 (and even to E0) to the extent used in MY 2001 and later light duty vehicles, nor does BIO oppose the inclusion of the existing conditions in the partial waiver decisions that

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

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

[11] Chillrud, R. Environmental and Energy Study Institute. "Ethanol Reduces a Variety of Harmful Emissions, New Study Finds". (Oct. 28, 2016). Available at https://www.eesi.org/articles/view/ethanol-reduces-a-variety-of-harmful-emissions-new-study-finds

[12] 10604

[13] Irwin, S., and D. Good. "On the Value of Ethanol in the Gasoline Blend." farmdoc daily (7):48, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, (Mar. 15, 2017) Available at http://farmdocdaily.illinois.edu/2017/03/on-the-value-of-ethanol-in-the-gasoline-blend.html

prevent misfueling. Although including the misfueling mitigation conditions of the section 211(f)(4) partial waiver is largely redundant and unnecessary. EPA has already adopted under sections 211(c), 208, and 114 the most significant misfueling mitigation measures through regulations binding on all relevant participants in the gasoline distribution system.

BIO does not oppose EPA clarifying that it finds E15 sub sim to E10 certification fuel insofar as it is introduced into commerce for general use in MY 2001 and later light duty vehicles, and precautions are taken to prevent its use in other vehicles/engines. This is consistent with exiting regulations EPA has promulgated and the partial waiver decision and conditions.

BIO opposes EPA's adoption of any new conditions on, or limit to, the sub sim interpretive rule that asserts that E15 is sub sim only for use in Tier 3 vehicles certified using E10 certification fuel. This is inappropriate and unlawful. EPA lacks any basis for concluding that there is a meaningful functional difference in the impacts of E15 versus E10 in MY 2001 and later light-duty vehicles but no such meaningful functional difference in Tier 3 vehicles certified using E10 certification fuel. Rather, the data indicate that there are no meaningful differences (with respect to emissions, materials compatibility, and driveability) due to the extra five percent ethanol in either case.

d. Isobutanol

BIO appreciates EPA's request for comment on the benefits other oxygenates, notably isobutanol[14]. BIO urges EPA to move quickly on recognizing the benefits of these technologies and develop a sub sim to encompass this technology.

In the proposed rule EPA states it lacks the data and information to move forward on emissions, materials compatibility, and drivability for other oxygenates to allow EPA to move forward on approving these technologies. However, the information and data supporting the application submitted by Butamax Advanced Biofuels, LLC on or about June 7, 2011, pursuant to the regulations at 40 CFR part 79, Registration of Fuels and Fuel Additives, for the registration of isobutanol, an alcohol, as a gasoline additive at up to 16 percent volume (the Application). "). Pursuant to the Application, Butamax's isobutanol was registered per 40 CFR79.23 on or about June 12, 2018 should be sufficient for EPA to move forward with a sub sim for isobutanol.

Because of isobutanol's unique properties and low vapor pressure, it can be easily added to conventional gasoline. As a "drop-in" fuel, isobutanol can utilize our nation's existing transportation fuel infrastructure. Isobutanol is beneficial in helping communities with compliance of environmental regulations. Ground-level ozone is harmful to breathe and damaging to crops, trees, and other vegetation. Due to isobutanol's low-blend volatility, it can help the over 300 counties nationwide reach EPA's target for ozone at 75 ppb and possibly achieve the EPA's

[14] 10601

Scientific Advisory Board recommendation that the ozone target be lowered to 60 to 70 ppb.[15]

Given the potential environmental and consumer benefits, EPA should remove the restrictions on isobutanol to provide greater market access and choice.

II. RIN Market Reforms

BIO urges the EPA to reject its proposed RIN Market Reforms that will negatively alter the market to tackle unproven concerns of market manipulation. When allowed to function as intended the RIN market can drive investment in infrastructure to deploy greater volumes and higher consumption of biofuels. Unfortunately, because of EPA's regulatory actions in previous rulemakings for the annual renewable volume obligations and its issuance of small refinery exemption (SRE) RIN prices continue to be at multi-year lows[16].

Despite these record low prices, some obligated parties continue to push EPA to make changes to the RIN market to artificially lower RIN prices. They contend RIN prices are volatile due to market manipulation despite the EPA and the Commodity Futures Trading Commission (CFTC) finding no evidence of manipulation. The CFTC has evaluated EPA's RIN market data and in 2016, the EPA and CFTC entered into a Memorandum of Understanding to share information to monitor the market[17]. In 2018, testifying before Congress, the CFTC Chairman explained that the CFTC was "not able to find any misbehavior in the market[18]."

EPA's Reform 2, requiring obligated parties to demonstrate quarterly compliance[19] would impose unnecessary burdens for no discernable benefit. EPA acknowledges that "that a smaller stockpile of RINs in a party's account relative to a smaller pool of available RINs can still result in market power. Therefore, the ultimate benefit of this reform on the RIN market and on parties' behavior is unclear[20]." Instead of minimizing opportunities for hoarding, it would merely prevent obligated parties from separating or purchasing their RINs all at once at the end of the year, likely increasing the transaction costs associated with compliance[21].

Reform 3, limiting who can purchase separated RINs[22] would greatly reduce liquidity and increase volatility, while doing nothing to prevent market

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[15] Ryan, Christoper, et al. "ISOBUTANOL - A RENEWABLE SOLUTION FOR THE TRANSPORTATION FUELS VALUE CHAIN." Gevo (May 2011). Available at https://static1.squarespace.com/static/50fb1a1fe4b0fa3b92204d53/t/5100bd4ee4b0b2093b3da198/1359002958664/Gevo+NPRA+White+Paper+Final.pdf

[16] Irwin, S. "Why are Ethanol Prices So Low?." farmdoc daily (9):23, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, (Feb. 8, 2019). Available at https://farmdocdaily.illinois.edu/2019/02/why-are-ethanol-prices-so-low.html

[17] CFTC-EPA MOU (Mar. 17, 2016), available at https://www.epa.gov/renewable-fuel-standardprogram/cftc-epa-memorandum-understanding

[18] CFTC Chairman J. Christopher Giancarlo, Testimony before the United States Senate Committee on Agriculture, Nutrition, and Forestry (Feb. 15, 2018)

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manipulation. While Reform 4, limiting duration of RIN holding by non-obligated parties, would further depress liquidity without preventing manipulation.

Instead of making substantive changes to the RIN market that would further depress investment in the development and uptake of biofuels, obligated parties should encourage EPA to quickly implement the portion of the proposed rule allowing E15 to take advantage of the RVP waiver. Since additional sales of E15 would tend to stabilize RIN prices at a lower value[23].

III. Conclusion

BIO applauds EPA's efforts to move forward on regulatory changes to allow E15 to take advantage of the 1-pound psi RVP waiver that currently applies to E10 during the summer months. Approval of the regulatory changes for E15 will spur investment and development of new biofuels infrastructure increasing the use of advanced and cellulosic biofuels.

We recognize the immense pressure the agency has been under to develop a solution to address this regulatory burden. Given the economic, environmental, and regulatory benefits E15 can provide to the transportation fuel market we urge EPA to have it finalized in time so retailers can make it available for consumers in the upcoming summer driving season.

Thank you for your consideration of these comments.

Sincerely,

Stephanie Batchelor
Managing Director, Industrial and Environmental
Biotechnology Innovation Organization (BIO)

[23] Stock, J.H. "The Effect of a Higher Ethanol Blend RVP Waiver on RIN Prices." Cambridge, MA: Department of Economics and Harvard Kennedy School, (Jul. 2017) Available at https://scholar.harvard.edu/files/stock/files/rvp_waiver_and_rins_stock_071117.pdf.