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Air and Radiation Docket and Information Center
U.S. Environmental Protection Agency
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Docket ID No. EPA-HQ-OAR-2011-0135: Control of Air Pollution From Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards

The Biotechnology Industry Organization ("BIO") is pleased to comment on the U.S. Environmental Protection Agency's ("EPA") Proposed Rule on "Control of Air Pollution From Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards" ("the proposed rule").¹

I. Introduction

BIO is the world's largest biotechnology organization, with more than 1,100 member companies worldwide. BIO represents leading technology companies in the production of conventional and advanced biofuels and other sustainable solutions to energy and climate change. BIO also represents the leaders in developing new crop technologies for food, feed, fiber, and fuel.

These companies are developing new and innovative ways to help fuel America and the world; providing more environmentally friendly energy crops, cleaner burning biofuels and renewable chemicals that help reduce greenhouse gas emissions and provide more sustainable sources of energy and materials. Achieving our nation's goals of less dependence of foreign sources of oil and cleaner fuels will require our economy to transition to sustainable energy resources and higher levels of energy efficiency. The companies BIO represents are developing innovative biobased fuels, products, and processes that will enable our economy to achieve these objectives.

¹ Environmental Protection Agency, Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards, 78 Fed. Reg. 29,816 (proposed May 21, 2013) (to be codified at 40 CFR Pts. 79, 80, 85, 86, 600, 1036, 1037, 1065 and 1066), available at <https://www.federalregister.gov/articles/2013/05/21/2013-08500/control-of-air-pollution-from-motor-vehicles-tier-3-motor-vehicle-emission-and-fuel-standards>) [Hereinafter "The Proposed Rule"].



Toward this end, federal policy and regulations—including the proposed rule as well as the federal Renewable Fuel Standard (RFS) and EPA’s consistent support and implementation of that policy—play an important role in helping to drive the commercialization of these technologies. The importance of federal policy is particularly critical in the transportation fuel sector. The U.S. transportation system is overwhelmingly and unsustainably reliant on petroleum fuels. These traditional fuels are a large component of the U.S. greenhouse gas (GHG) emissions inventory and our overdependence on foreign sources of energy. Rapid transition to more alternative transportation fuels is essential to reducing GHG emissions and reducing U.S. reliance on foreign sources of energy.

BIO commends EPA on the proposed rule and the Agency’s work to take a “systems approach to addressing the impacts of motor vehicles and fuels on air quality and public health.”² EPA clearly recognizes that the most effective and efficient way to achieve these important goals of the proposed rule is to work to harmonize it with other policies affecting and regulating the transportation fuel sector throughout the country, including the RFS, Corporate Average Fuel Economy Standards (CAFE), and California’s Low Emission Vehicle Program.³ BIO supports the proposed rule and believes that the final Tier 3 rule has the potential to encourage the continued development and commercialization of all biofuels.

Below, BIO provides context for our comments on specific provisions in the proposed rule by first briefly discussing the rapid growth and attributes of the renewable fuels industry to the U.S. fuel supply, and the importance of these other policies, particularly the RFS, to the development and commercialization of the industry. Following this discussion, BIO comments on specific elements of the proposed rule that could promote the continued development and use of biofuels—which are inherently low in sulfur content and by statute must have reduced GHGs over traditional fuel.

² *Id.* at 29816.

³ *Id.* at 29825.



II. Biofuels and Their Supportive Policies Are Important to the U.S. Fuel Supply

The federal RFS, enacted in 2005 and updated in 2007, is an important tool in achieving the objectives of energy independence and pollution reduction. The RFS is the single most important federal policy driving investment and commercialization of conventional and advanced biofuels. Biofuel production under the RFS has already displaced nearly 10 percent of gasoline consumption and will account for more than 20 percent of U.S. transportation fuel by 2022. Biofuel production under the RFS reduced the need for imported oil by more than 462 million barrels in 2012.

Investment in biofuels, largely spurred by the RFS, has led to the development of facilities like INEOS Bio's in Vero Beach, Florida, and KiOR's in Columbus, Mississippi, which represent several hundred million dollars of investment in the United States and are poised to begin production of the next generation of renewable fuel from non-food feedstocks this year. Dozens more advanced biofuel projects are planned or under construction, as highlighted in the attached Appendix I, illustrating the visible success the RFS has had in driving development of highly skilled, well-paying jobs in rural America. Biofuel production under the RFS has led to the employment of 380,000 Americans. And, 800,000 employment opportunities could be created by 2022.⁴

III. The "Blend Wall"

BIO firmly believes that the limits to market access for biofuels commonly referred to collectively as the "blend wall" represent a series of barriers contrived by obligated parties⁵ to prevent biofuels from gaining access to the marketplace.⁶ Multiple avenues exist for

⁴ Bio Economic Research Associates, "U.S. Economic Impact of Advanced Biofuels Production: Perspectives to 2030." Washington, DC: February 2009.

⁵ "Big oil" may block branded retail blender pumps: Green Plains
<http://www.platts.com/RSSFeedDetailedNews/RSSFeed/Oil/8102457>

⁶ Fill Up With Ethanol? One Obstacle is Big Oil, <http://online.wsj.com/article/SB117547886199856472.html>



blending additional volumes of biofuel into the nation's fuel supply. For instance, as the proposed rule recognizes, E15 blends are approved and ready for use, and production of flex fuel vehicles continues to increase. These options, combined with the introduction of new "drop-in" fuel molecules, provide a suite of opportunities for the growth of the entire biofuels industry and RFS compliance.

The main obstacle to this growth and compliance is the dilatory tactics of obligated parties to pursue the options available to them.⁷ Obligated parties have had over five years to begin establishing the infrastructure necessary to distribute RFS-mandated biofuel volumes, but have taken few steps to do so. EPA should therefore resist all efforts by obligated parties to postpone updating the U.S. certification fuel for emissions from light duty cars and trucks and heavy duty gasoline vehicles, or to reduce RFS obligations based on blend wall claims. Any concession by EPA to accommodate these assertions regarding the blend wall will only serve to embolden obligated parties in their effort to resist compliance with the Clean Air Act.

Instead, as it is able through the proposed rule and other administrative actions, the Agency should encourage the development of biofuels – and the engines and infrastructure to support them. This development can readily grow the supply of biofuels in the market and overcome the blend wall by allowing Renewable Identification Numbers (RINs) to truly reflect their market value. It will also help drive the market and encourage retailers to adopt new infrastructure as reflected in Appendix I.

EPA should also seek to identify opportunities to grow biofuel markets, including for drop-in biofuels. Reconsideration of the gasoline base fuel would enable engine manufacturers to optimize beneficial characteristics of biofuels in engine design, while

⁷ Trade group requests U.S. probe of oil industry's efforts to impede renewable fuels, <http://eenews.net/eenewspm/2013/03/19/archive/9?terms=RFA%2C+ConocoPhillips>



expedited approval of new molecules would provide obligated parties with additional options for compliance not subject to blending limitations.⁸

IV. Comments and Suggestions on the Proposed Rule

BIO believes the final Tier 3 rule has the potential to continue the progress of the biofuels industry and help alleviate the “blend wall” as described above. BIO commends EPA’s efforts to transition the certification test fuel for emissions from light duty cars and trucks and heavy duty gasoline vehicles (“the emissions test fuel”) to better reflect the current and future in-use fuel as it begins to contain greater volumes of biofuels resulting from the continued development and commercialization of biofuels and increased RFS volumes in the market.

BIO believes that EPA should work to finalize its Tier 3 rulemaking and set the emissions test fuel to encourage further investment and adoption of biofuels, including advanced drop-in biofuels, ethanol and other fuel molecules. Encouraging biofuels, including higher blends of ethanol and drop-in biofuels would help meet EPA’s overall goal in this rulemaking to address the impacts of motor vehicles and fuels on air quality and public health.⁹ For instance, advanced drop-in biofuels have the same molecular make-up of traditional petroleum-based fuels, but they contain little or no sulfur and have significantly reduced GHGs. In addition, ethanol combusts without producing air toxics, which are the main source of particulate matter. Blending ethanol in gasoline also reduces the need for unhealthy detergent additives which are mandated to reduce the formation of engine deposits from gasoline that increase exhaust emissions and result in the loss of fuel economy and performance. These benefits of biofuels only rise with higher blends. BIO encourages EPA to issue a final rule that maximizes investment and adoption of all biofuels, including higher blends and drop-ins.

⁸ http://www.afdc.energy.gov/fuels/emerging_dropin_biofuels.html

⁹ The Proposed Rule at 29816.



a. Octane

BIO urges EPA against lowering octane as it allows for higher biofuel content in the emissions test fuel in order to further help meet its air quality and public health goals, as well as to help incentivize automakers and help them meet their CAFE requirements for model vehicles 2017 and beyond. Instead, BIO suggests EPA issue a final Tier 3 rule that maximizes investment in biofuels, while also encouraging the highest achievable level of octane in transportation fuel.

Ethanol and other alcohol fuels including butanol, for instance, have higher octane ratings than neat fuel. Higher octane enables higher compression and more efficient combustion engines.¹⁰ It could actually boost fuel economy in future car models, according to a 2009 report by Sandia National Labs, if automakers concentrate on developing smaller engines with higher compression and turbocharging.¹¹ For this reason, encouraging higher octane could help incentivize automakers to make cars that run on cleaner fuel.

High octane blends including ethanol offer a means for auto manufacturers to meet higher mileage CAFE standards. In fact, during EPA's recent public hearing on Tier 3, Mercedes Benz publically announced its support for the Tier 3 proposed emissions test fuel and urged adoption of higher blends including E25.¹² And last year, the Alliance for Automobile manufacturers filed comments to EPA stressing the need to transition to higher blends.¹³

¹⁰ Formula 1 and IndyCar race cars use ethanol to achieve high performance.

¹¹ Next Generation Biofuels and Advanced Engines for Tomorrow's Transportation Needs. November 17 and 18, 2009, San Ramon, CA. <http://digitalcommons.unl.edu/usdoepub/82/>

¹² Testimony of Bill Woebkinberg, Mercedes Benz of North America, April 29, 2013 U.S. Environmental Protection Agency public hearing on Tier 3 proposed rule making.

¹³ Alliance of Automobile Manufacturers, Comments on the Proposed Rulemaking to Establish Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for MY 2017-2025 (Submitted February 13, 2012), available at <http://www.autoalliance.org/index.cfm?objectid=6CADFDC0-B980-11E1-9E4C000C296BA163>



b. New Emissions Test Fuel

EPA requests comment on various ways to transition the emissions test fuel, including: starting with a transition to E10 with a transition to E15 as that fuel becomes more widely available on the market; transitioning to E15 after a few years to allow time for this greater market availability or by setting a date certain by which the transition should be made to help drive E15 market availability; or, allowing “vehicle manufacturers to request approval for an alternative certification fuel, such as a high-octane 30 percent ethanol by volume (E30) for vehicles they might design or optimize to use such a fuel” so that it may “help manufacturers that wish to raise compression ratios to improve vehicle efficiency, as a step towards complying with the 2017 and later light-duty greenhouse gas and CAFE standards.”

As BIO describes above, we urge EPA to issue a final Tier 3 rule that maximizes investment and adoption of biofuels. We agree with EPA’s assertion that E10 is widely available and in use in today’s market, and that E15 and E85 are the most likely near term biofuels that have the potential to be widely available. We believe the final rule should allow for and encourage ongoing and greater use of E85 and E15, as well as the transition to higher blends of ethanol, and drop-in biofuels.

To this end, BIO urges EPA to issue a final rule that recognizes that new biofuel molecules are beginning to enter the market for blending with gasoline in order to help achieve the goals of the RFS. As such, we urge EPA to ensure that any transition in the certification fuel not create unintended barriers and burdensome costs to companies working to register these new biofuel molecules under Part 79 fuel and fuel additive registration.

As EPA suggests, one way to accomplish this goal may be to allow vehicle manufacturers to request approval for an alternative certification fuel such as a high-octane E30 blend for vehicles they might design or optimize for use on such a fuel. BIO is aligned with EPA’s assertion in the proposed rule that “[t]his could help manufacturers that wish to raise



compression ratios to improve vehicle efficiency, as a step toward complying with the 2017 and later light-duty greenhouse gas and CAFE standards...[t]his in turn could help provide market incentive to increase ethanol use beyond E10 by overcoming the disincentive of lower fuel economy associated with increasing ethanol concentrations in fuel, and enhance the environmental performance of ethanol as a transportation fuel by using it to enable more fuel efficient engines."¹⁴ Preliminary results from Oak Ridge National Laboratory and the University of Wisconsin suggest that moderate biofuel blends increase the benefits of the use of Reactivity Controlled Compression Ignition.¹⁵ Therefore in order to further help manufacturers develop engines which can utilize biofuels which deliver reductions in greenhouse gas emissions; BIO recommends EPA sets the "R-factor," which may be considered as the efficiency with which the vehicle engine adapts to fuel variations, at a value of 1.0. By doing so, EPA will ensure the final rule does not discourage manufacturers from developing engines that can utilize new cleaner burning biofuels in order to achieve the overall goals of the proposed rule.

V. Conclusion

BIO believes the final Tier 3 rule has the potential to compliment other transportation related policies, including the RFS, which promote the continued development, commercialization and use of biofuels. We commend EPA's efforts to transition the emissions test fuel to help promote the goals of the RFS. BIO believes that EPA should work to set the emissions test fuel to maximize investment and adoption of all biofuels, including higher ethanol blends and drop-ins, while also maximizing the level of octane in the U.S. fuel supply. This action would help EPA meet one of its stated goals of this rulemaking to address the impacts of motor vehicles and fuels on air quality and public health.

¹⁴ The Proposed Rule at 29825.

¹⁵ Hanson, R., Curran, S., Wagner, R., and Reitz, R., "Effects of Biofuel Blends on RCCI Combustion in a Light-Duty, Multi-Cylinder Diesel Engine," *SAE Int. J. Engines* 6(1):488-503, 2013, doi:10.4271/2013-01-1653.



To this end, we believe the final rule should allow for and encourage ongoing and greater use of E85 and E15, as well as the transition to higher blends of ethanol and drop-in biofuels.

BIO also supports EPA's proposal to allow vehicle manufacturers to request approval for an alternative certification fuel such as a high-octane E30 blend for vehicles they might design or optimize for use on such a fuel. As described above, we agree with EPA that this provision could help auto manufacturers meet their CAFE requirements.

BIO and its members look forward to working with EPA and the affected parties of this rulemaking to ensure implementation of a final Tier 3 rule that promotes the continued development of the biofuels industry as expressed in these comments, while complimenting other transportation regulatory requirements, including under the RFS and CAFE.

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in black ink that reads "Brent Erickson".

Brent Erickson,
Executive Vice President
Industrial & Environmental Section