



April 29, 2019

The Honorable Andrew Wheeler
Administrator, Environmental Protection Agency
1200 Pennsylvania Ave NW
Washington, DC 20460

RE: Docket ID: EPA-HQ-OAR-2018-0775

Dear Administrator Wheeler:

On behalf of more than 40,000 dues-paying corn farmers nationwide and more than 300,000 corn growers who contribute to corn checkoff programs in their states, the National Corn Growers Association (NCGA) appreciates the Environmental Protection Agency (EPA) moving forward with a proposed rule to remove outdated barriers and treat 15 percent ethanol blends, or E15, the same as standard 10 percent ethanol blends.

By allowing E15 to receive the same summer volatility adjustment EPA permits for E10, retailers will be able to offer drivers E15 year-round, providing choice to their customers without an interruption in sales between June and September. Corn growers have advocated for this change for several years, and we agree with EPA's assessment that the conditions that led EPA to provide the original volatility adjustment for E10, at a time when 10 percent was the highest ethanol blend available, are "equally applicable to E15 today."¹

To ensure E15 sales are not interrupted again this year, NCGA urges EPA to complete this rulemaking by June 1, as well as ensure the complex RIN market reform proposal does not weigh down the E15 rule and remains severable.

While farmers are not direct participants in the RIN market, we know an effective RIN market helps drive biofuels blending under the Renewable Fuel Standard (RFS), and NCGA is concerned with many of the proposed changes for the RIN market. EPA must ensure RIN market rules are fair to those who are blending biofuels to further the RFS and maintain an efficient RIN marketplace. As such, EPA should not finalize the four primary proposed RIN market changes.

NCGA's supplemental comments on EPA's proposal to reinterpret Clean Air Act section 211 (h)(4) and to find that E15 is substantially similar to E10 certification fuel under Clean Air Act section 211 (f)(1) are attached to our following summary comments on the RVP proposed rule and our comments on the RIN market proposed rule. Thank you for considering our views.

Sincerely,

Lynn Chrisp, President
National Corn Growers Association

¹ 84 Federal Register 10586 (March 21, 2019)

I. Modifications to Fuel Regulations to Provide Flexibility for E15

Proposed Interpretation of CAA 211 (h)(4)

NCGA agrees with EPA's proposal to update interpretations of the Clean Air Act (CAA), providing parity for E15 with E10. EPA's prior CAA interpretations were made long before the agency approved E15 in 2011 and before EPA updated the vehicle certification fuel in the Tier 3 Motor Vehicle Emissions and Fuel Standards Rule in 2014. These major changes make it imperative that EPA revisit how E15 is treated.

As EPA recognizes, the same market limitation that led to the 1-psi volatility adjustment for 10 percent ethanol blends in 1989 currently exists for E15. Lower-RVP gasoline blendstock is not widely available, limiting the ability of blenders and retailers to bring more E15 to the marketplace. By treating E15 the same as E10, the same gasoline blendstock that has been available year-round for E10 blending can be used to blend E15 year-round. When Congress legislated on EPA's application of the 1-psi allowance, E10 was the highest ethanol blend available. In 2011, EPA granted a partial waiver to permit the use of E15 in 2001 and newer vehicles, and the gasoline marketplace has changed with the introduction of E15.

RVP parity for E15 does not increase the RVP of ethanol blended fuels because the allowed RVP for E15 is no higher than that already allowed for E10. We agree with EPA's assessment that the evaporative emissions effects for E15 would be similar, if not slightly lower, than those for E10.² Therefore, providing the same RVP allowance for E15 as E10 furthers EPA's goal of lowering evaporative emissions by regulating fuel volatility through RVP.

NCGA agrees with EPA's interpretation that CAA section 211 (h)(4) specifies a minimum ethanol content – 10 percent – that fuel blends must contain to qualify for the 1-psi allowance. E15 contains at least 10 percent ethanol and does not exceed its CAA section 211 (f)(4) condition on ethanol content, which is 15 percent. This updated interpretation of the law reflects that Congress effectively put a floor in the 1990 CAA Amendments while allowing a means for future higher blends of ethanol to enter the market.

As EPA notes, the proposed regulatory amendments for CAA section 211 (h)(4) would not change the E15 Misfueling Mitigation Rule (MMR) promulgated under CAA section 211 (c) that prohibits the use of E15 in pre-2001 motor vehicles and various small engines such as motorcycles and non-road engines and requires pump labeling. Today, nearly 90 percent of vehicles on the road were manufactured after 2001, and the number of pre-2001 vehicles on the road becomes smaller every year. However, the pre-2001 vehicle and other small engine restrictions for E15 remain in place under this proposed rule because of the MMR.

Misfueling is not occurring now and is less likely to occur with more E15 in the marketplace. As E15 has become more widely available, consumers are becoming increasingly familiar with this

² 84 Federal Register 10592 (March 21, 2019)

fuel. E15 is now available at nearly 1800 locations in 30 states, with more retailers expected to begin offering E15 when this rulemaking is complete. Because of the growing demand from retailers, E15 availability at fuel terminals across the country has grown from five in 2017 to more than 100 today. The current regulatory situation, which requires retailers to stop offering E15 for certain months of the year, confuses consumers, but choosing the right fuel for their engine does not. Year-round availability of E15 will enhance consumer knowledge and confidence. NCGA agrees with EPA that “additional misfuelling measures are unnecessary at this time and outside the scope of this rulemaking.”³

Proposed Substantially Similar Interpretation

NCGA strongly urges EPA to also adopt the proposed interpretive rulemaking that finds E15 is “substantially similar” (sub sim) to the current vehicle certification fuel. This correct interpretation of sub sim enhances the rule and creates parity across the fuel supply chain. The sub sim interpretation allows all segments of the fuel supply chain, including fuel manufacturers, refiners and importers, to use the 1-psi allowance, rather than limiting the application to downstream oxygenate blenders and retailers under the new 211 (h) interpretation.

Just as conditions have changed related to EPA’s prior interpretation of Section 211 (h), conditions have also changed regarding the prior sub sim interpretation for E15. In the 2014 Tier 3 rulemaking, EPA updated the certification test fuel from gasoline with no ethanol in it to E10 because 10 percent ethanol blends had become the standard fuel in the marketplace. In addition, the service accumulation fuel for vehicle durability testing has been E15 since MY2014, as the fuel with the highest concentration of ethanol available in the market.

With the change in the certification fuel, we agree with EPA’s finding that E15 is sub sim to the Tier 3 E10 fuel. On all three factors that EPA has weighed in previous sub sim determinations – emissions, materials compatibility and driveability – E15 is sub sim to the E10 certification fuel; we assess these factors in the next section. We also agree that EPA need only find that E15 at 9.0 psi RVP is sub sim to Tier 3 E10 certification fuel at 9.0 psi RVP in order for fuel manufacturers and downstream blenders and retailers to be eligible for the summer volatility adjustment currently available to E10 in CAA section 211 (h), as EPA reinterprets in the proposed rule.

NCGA opposes any new conditions on the E15 sub sim determination not previously addressed by the CAA section 211 (f)(4) waiver conditions or the MMR issued under CAA section 211 (c). New conditions on E15 as discussed in the proposed rule are inconsistent with the purpose of the sub sim finding. The sub sim finding applies to the fuel and should not be limited to those vehicles tested on the Tier 3 certification fuel or a narrower range of vehicles than those specified by the E15 waiver conditions or the MMR. As previously discussed, the MMR issued under CAA section 211 (c) authority remains in effect, prohibiting use of E15 in pre-2001

³ 84 Federal Register 10603 (March 21, 2019)

vehicles and various small engines, and EPA has already determined that use of E15 in pre-2001 vehicles would not cause exceedance of emissions standards or driveability or materials compatibility issues.

NCGA supports ensuring the E15 rule works throughout the fuel supply chain. Through NCGA and state corn grower associations, farmers have made significant investments to support biofuels infrastructure. In addition, the U.S. Department of Agriculture invested \$100 million in matching funds to states through its Biofuels Infrastructure Partnership (BIP) grant program. BIP grants matched investment to support higher blends of ethanol such as E15 and E85 through blender pumps and other infrastructure. These industry and government partnerships supported retailers who were early adopters of higher ethanol blends, leading the way for more choice at the fuel pump.

NCGA is concerned EPA's application of the proposed rule with regard to blender pumps would leave many of these investments stranded, reducing the availability of higher blends of ethanol in many areas. EPA has previously proposed solutions to allow E15 produced from E85 through blender pumps to meet fuel quality standards. NCGA asks EPA to finalize this portion of the REGS rule in order to allow a means of compliance to ensure all sources of E15 are eligible for the 1-psi allowance while also meeting the applicable RVP standards.

Finally, regarding EPA's request for comment on continued use of the "deemed to comply" provision, NCGA believes "deemed to comply" is useful for compliance flexibility. In addition, the highest permissible ethanol content has changed over time, and NCGA wants to ensure the regulatory process remains open and accessible to future fuels, such as mid-level ethanol blends.

Emissions, Driveability and Materials Compatibility

As EPA cites in the proposed rule, a 2018 study of newer vehicles and the effects of ethanol on emissions found no statistically significant differences in NO_x or particulate matter when comparing E10 and E15 at different aromatics levels.⁴⁴ In a June 2017 U.S. Senate Environment and Public Works Committee hearing regarding E15, Dr. Janet Yanowitz of EcoEngineering, Inc. presented testimony that reviewed and summarized E15 emissions testing, concluding that, "the available emissions test data indicates that replacing E10 with an E15 of the same vapor pressure will cause a slight decrease in emissions of ozone forming organic compounds and carbon monoxide, and no change in NO_x."⁵⁵

Blending ethanol in fuel displaces the most harmful compounds found in gasoline. These aromatic hydrocarbon additives (such as benzene, toluene, ethylbenzene, xylene – or BTEX) have high cancer-causing potential. According to EPA's 2016 Fuel Trends Report, "Ethanol's

⁴⁴ 84 Federal Register 10599 (March 21, 2019)

⁵⁵ *Legislative hearing on S. 517: Hearings before the Committee on Environment and Public Works*, U.S. Senate, 115th Congress (2017) (Testimony of Janet Yanowitz, P.E, Ph.D.)

high octane value has also allowed refiners to significantly reduce the aromatic content of the gasoline, and EPA's reported data shows that aromatics' share of gasoline volume has dropped while ethanol blending increased during that time period."⁶

NCGA agrees with EPA that the additional five volume percent ethanol in E15 will "further dilute hydrocarbon fuel components such as aromatics."⁷ Increased use of E15, while optional under this proposed rule, will reduce harmful exhaust emissions. As EPA notes, the only potential to reduce the benefits of expanded E15 use comes if refiners subsequently downgrade the base gasoline blendstock, as refiners did when E10 blending became prevalent, and undo some of the emissions reductions that occur when E15 is made from the same blendstocks currently used to make E10.

With regard to evaporative emissions, because E15 has a slightly lower RVP than E10, "to the extent that E15 displaces E10 in the short term, E15 is expected to lower the volatility of in-use gasoline by as much as 0.1 psi."⁸ Across the various components of evaporative emissions, we agree with EPA's assessment that E15 is substantially similar to E10.

Finally, regarding emissions, NCGA also notes that increasing fuel ethanol volume from 10 percent to 15 percent further reduces greenhouse gas (GHG) emissions from the transportation sector. Because ethanol results in lower greenhouse gas emissions than gasoline, increasing the volume of ethanol in the fuel provides greater GHG reductions.

First published in 2017 and recently updated in 2018, the updated lifecycle assessment from the United States Department of Agriculture (USDA) shows corn-based ethanol currently results in 43 percent lower GHG emissions than gasoline when produced at a natural gas-powered ethanol plant, the standard for today's biorefineries.

The United States Department of Energy's Argonne National Lab's GREET model measures lifecycle emissions of transportation fuels. Argonne's GREET model continues to show steady improvement in corn ethanol's lifecycle GHG profile. The 2016 GREET model shows corn-based ethanol's carbon intensity is 45 percent below the carbon intensity of baseline gasoline.

We also agree with EPA that E15 is sub sim to the Tier 3 certification fuel in terms of materials compatibility and driveability. When granting the partial waiver in 2011, EPA found no materials compatibility and driveability concerns with E15. E15 compatibility is the standard for new vehicles, and new E15-warranted vehicles are added to the fleet each year while older vehicles are retired. Furthermore, E15 has been the certification fuel for service accumulation since MY2014. As result, today's vehicles have better materials compatibility and driveability performance with E15 than vehicles tested for the 2011 partial waiver. Since approval of E15, there have been no reported cases of engine damage after 8 billion miles driven with the fuel.

⁶ Add reference to EPA report

⁷ 84 Federal Register 10603 (March 21, 2019)

⁸ 84 Federal Register 10603 (March 21, 2019)

E15 Economic Impacts

Increasing the amount of renewable fuel blended into the nation's transportation fuel supply increases U.S. energy security and independence by diversifying transportation fuel sources. Diversifying our fuel sources also lowers prices for consumers, strengthens the agriculture economy, and creates new jobs and investment in renewable fuels.

Because all vehicles on the road can run on regular gasoline, which is primarily E10 today, when retailers add E15 to their inventory, they retain all previous customers while doing more to service the nearly 90 percent of vehicles capable of using E15. Consumers choose E15 because it offers higher octane fuel at a lower cost, with E15 saving drivers between 3 and 10 cents per gallon at the pump. At both the wholesale and retail level, ethanol costs less than gasoline. When EPA proposed this rule, ethanol was priced around 50 cents less per gallon than gasoline at the wholesale level. Every time an additional gallon of ethanol is added, fuel prices go down.

The cost for retailers to add E15 is often exaggerated, partly due to the complex nature of requirements regarding fuel. According to audits by the U.S. Department of Energy's National Renewable Energy Lab (NREL), nearly all underground storage tanks and systems can safely store up to 100 percent ethanol. This limits the transition to above ground equipment, which, for E15, is quite reasonable. According to both the Petroleum Equipment Institute and the USDA, most stations can upgrade their hanging hardware and dispensers adding E15 capability for as little as \$1,000. Converting current fuel positions costs even less.

Using more ethanol diversifies our fuel supply. Even as U.S. oil production has increased, nearly 20 percent of our oil is imported. Continued reliance on oil, regardless of its source, burdens American families, our economy, and our armed forces by directly linking us to the volatility of the global oil market and those who control it.

Important to NCGA, year-round E15 will increase domestic demand for our corn. Continued low commodity prices and consecutive years of declining farm income, coupled with recent trade disruptions and EPA's expansive RFS waivers for refineries, are taking a toll on farmers. While year-round E15 cannot offset the harm from refinery waivers, higher blends of ethanol are a no-cost means to expand a domestic market for farmers.

Through the 2018 crop year, 5.57 billion bushels of U.S. corn were used to produce 16 billion gallons of ethanol. Corn ethanol production returned the equivalent of 1.24 billion bushels of corn as distillers dried grains for feed. However, corn use for ethanol declined slightly in 2018, and further declines are expected. USDA's April 2019 World Agriculture Supply and Demand Estimate projects a 105 million bushel decline in corn used to produce ethanol for the 2018/2019 marketing year compared to the 2017/2018 marketing year.

Farmers are facing their sixth consecutive year of depressed income and commodity prices. Even with a projected net farm income increase in 2019, farm income would still be 50 percent below 2013 levels and well below the average since 2000. For 2019, USDA forecasts a

continued increase in farm sector debt and forecasts the farm sector's risk of insolvency to be at its highest level since 2002.

Increased demand for corn for ethanol helps support commodity prices, provides additional marketing options and adds value through co-products such as distillers grains and corn oil. Growing sales of higher blends of ethanol, such as E15, offers a market-based solution for sustaining the agriculture economy.

Corn production has improved on all measures of resource efficiency, further fortifying ethanol as a sustainable renewable fuel. For example, corn farmers more than doubled production between 1980 and 2014 while cutting crop nutrient inputs by half. Corn production has primarily increased because crop yields have increased from an average of 150.7 bushels per acre in 2007 to 176.4 bushels in 2018. Productivity growth is a long-term trend; production in 1980 averaged 91 bushels per acre.

Ethanol production has not had a significant impact on total agricultural land use, even as ethanol hit its highest production level in 2018. According to USDA data, planted corn acres in 2012 were nearly 8 million more than in 2018, and 2007 planted corn acres, the year the RFS expanded, were nearly 4 million greater than last year.

Ethanol demand has a strong, positive impact on corn production and agriculture, adding value to the commodity we produce. Removing an outdated barrier to expanding E15 availability and sales benefits the farm economy at a time when farmers need new markets to increase demand.

II. Modifications to RFS RIN Market Regulations

EPA is proposing significant changes to rules governing the market for Renewable Identification Numbers (RINs). As in other markets, transparency and liquidity are essential to an efficient and effective RIN market. A well-functioning RIN market helps support biofuels blending under the RFS.

Under the RFS, obligated parties have the option of blending renewable fuel and obtaining RINs for free to demonstrate compliance. Parties that opt not to blend renewable fuel may purchase separated RINs as an alternate compliance method. Maintaining an open RIN trading market provides compliance flexibility for all parties and supports a robust marketplace, including market access for non-obligated parties that sell RINs they receive from blending biofuels to supply RINs for obligated parties that choose not to blend.

Obligated parties have had more than 10 years to make necessary adjustments to ensure their compliance with the RFS. Although many have made compliance adjustments, others have not. While some obligated parties have raised concerns about higher RIN values, EPA, in numerous reviews such as annual RFS volume rulemakings, has repeatedly concluded that RIN values do

not have an economic impact on refiners. As EPA states in the proposed rule, agency analysis has concluded that, “RIN prices generally reflected market fundamentals and that obligated parties (including parties that purchase separated RINs) recover the cost of RINs in the market price of the gasoline and diesel fuel they sell.”⁹

RIN prices rise when the demand for RINs to meet RFS obligations rises. Obligated parties that do not want to depend on buying RINs have the option of blending renewable fuel and separating their own RINs. For those blending renewable fuels, higher RIN values provide an incentive to increase blending and support investment in infrastructure to provide higher blends of ethanol, such as E15. In turn, greater blending increases the RIN supply and lowers RIN values.

In the proposed rule, EPA states the agency has “yet to see data-based evidence of RIN market manipulation.”¹⁰ Without data-based evidence of RIN market manipulation, EPA’s proposed rule is a solution in search of a problem. Regulating a potential problem is a much different undertaking than proposing a regulation to address a documented problem. Without a documented problem, it is impossible to know whether the proposed solutions are the best solutions.

Rather than proceed with the specific proposals EPA outlines in the rule, NCGA urges EPA to first proceed with the additional market monitoring capabilities discussed in the proposed rule, including enhanced data collection and the consideration of third-party market monitoring. Beginning with enhanced data systems and data collection, EPA could then better assess whether RIN market manipulation is occurring. By diagnosing a problem before proposing solutions, EPA would be in a better position to support transparency and function in the RIN market.

Overall, NCGA believes EPA’s RIN market proposals would create asymmetry in the market by establishing different RIN holdings thresholds, quarterly retirement or sales requirements and purchase restrictions for non-obligated and obligated parties. This asymmetry penalizes non-obligated parties blending biofuels to separate RINs and tips the scale in favor of obligated parties that rely on RIN purchases to meet their obligations under the RFS. Rather than increasing transparency, EPA’s proposed reforms tilt the playing field in the RIN market in ways that discourage biofuels blending. The RIN marketplace exists to offer compliance flexibility for meeting parties’ RFS obligation – an obligation to blend biofuels.

Disclosure of RIN Holdings in Excess of Threshold

EPA proposes that both obligated parties and non-obligated parties with end-of-day separated RIN holdings that exceed certain thresholds notify EPA of the exceedance and that EPA publish the names of parties that have exceed the thresholds each quarter. In contrast to EPA’s

⁹ 84 Federal Register 10607 (March 21, 2019)

¹⁰ 84 Federal Register 10607 (March 21, 2019)

determination that names of obligated parties that receive small refinery exemptions are confidential business information, EPA is proposing that the names of parties that exceed the thresholds are not considered confidential business information.

While NCGA supports transparency in the RIN marketplace, we have concerns that the disclosure thresholds for obligated parties and non-obligated parties are different. While both sets of parties would be subject to an end-of-day threshold of three percent of the total implied conventional biofuel requirement, non-obligated parties would be flagged at that threshold while obligated parties would not if their RIN holdings were below a second threshold of 130 percent of their individual implied conventional ethanol volume obligation.

According to EPA's review of D6 RIN holdings for the past year, very few obligated parties exceeded the three percent threshold and no non-obligated parties exceeded the threshold. The fact that few parties exceeded this threshold indicates that concentrated holdings of separated RINs do not appear to be used to manipulate markets.

Non-obligated parties should not be discouraged from blending biofuels and generating RINs. The more RINs that non-obligated parties blend and separate, the greater the RIN supply available to obligated parties that have chosen not to blend. Along the same lines, obligated parties that blend biofuels should not be discouraged from blending and holding the RINs necessary to meet their obligations.

Regarding EPA's request for comment on setting a lower holding percentage threshold for non-obligated parties than for obligated parties, we believe setting different requirements for non-obligated parties creates asymmetry in the RIN market and could penalize biofuels blending. Different rules for different sets of market participants would increase the market power of obligated parties over non-obligated parties.

EPA also requested comment on whether applying a lower threshold for non-obligated parties could substitute for other proposed reforms of limiting RIN purchases by non-obligated parties and limiting how long non-obligated parties can hold RINs. NCGA has serious concerns with these additional proposed reforms because they put restrictions on parties who are blending biofuels to further the goals of the RFS and tip the scale in favor of parties who choose not to blend biofuels. As such, the one percent threshold for disclosure for non-obligated parties would be preferable to the other proposed reforms.

Increased RFS Compliance Frequency/Time Limit on RIN Holdings

EPA is proposing that obligated parties demonstrate compliance with a portion of their annual RFS obligation each quarter, a change from the current requirement to demonstrate compliance once at the end of the year. Rather than smoothing demand for RINs across the compliance year, quarterly RIN retirement requirements simply shift price volatility and concerns about relative market power to the end of each quarter.

This quarterly compliance requirement would apply to 80 percent of an obligated party's annual RIN obligation for all RIN categories. In contrast, EPA is proposing that non-obligated parties sell or retire the same number of D6 RINs per quarter as were obtained during that quarter. For non-obligated parties, the requirement to sell 100 percent of their D6 RINs obtained during a quarter when obligated parties would only have to meet 80 percent of their obligation on a quarterly basis with any type of RIN gives greater flexibility to RIN buyers than RIN sellers, tilting the market in the buyers' favor.

A requirement for non-obligated parties to sell or retire an equal number of D6 RINs per quarter as obtained during that quarter increases the market power of parties buying RINs. Those obligated parties can simply wait to buy RINs until the end of the quarter, knowing that sellers have no choice but to sell a quarter's worth of RINs. In addition, the quarterly limitation on RIN holdings for non-obligated parties reduces market power of smaller companies in the supply chain that aggregate RINs over time to be able to sell them in the RIN market on a more competitive basis with large refiners. Fuel blenders that generate separated RINs for the compliance market, supplying obligated parties that choose not to blend biofuels, should have the flexibility to sell those RINs and participate in the RIN market.

EPA also provides a loophole for obligated parties from quarterly compliance. By petitioning for a small refinery exemption, which EPA has greatly expanded in the past year, obligated parties can forgo the quarterly compliance requirement and opt to wait until a decision is made on their petition before demonstrating compliance. Obligated parties should be required to demonstrate compliance, whether that remains on an annual basis or shifts to a quarterly basis, unless or until they are granted an exemption.

Limitation on RIN Purchasers

Finally, EPA is proposing to limit parties that do not have an RFS compliance obligation from purchasing separated RINs. While EPA believes this proposal would "successfully exclude from the RIN market those parties that serve no function in the fuels market and that may enter the RIN market for speculative or manipulative reasons only," NCGA is concerned this proposal reflects a lack of understanding of the need for liquidity in the marketplace and the important role biofuel blenders and other non-obligated parties play in the fuel supply chain.¹¹

Reducing the number of participants in the RIN market would reduce liquidity in the market, making RIN prices more volatile and increasing RIN prices when there are fewer buyers in the market. Prohibiting blenders from buying RINs in most cases would create yet another new asymmetry in the RIN market between refineries and blenders, making more options available to refiners to meet contract obligations that are not available to blenders.

¹¹ 84 Federal Register 10620 (March 21, 2019)

III. Conclusion

Farmers don't want high RIN prices; we want higher blends. Greater biofuels blending, which will be facilitated by removing the barrier that keeps many retailers from offering E15 year-round, will increase the supply of RINs and reduce volatility in the RIN market. These asymmetrical RIN market rule changes, impacting the non-obligated parties blending and delivering biofuels to consumers, work against biofuels blending, the objectives of the RFS and the potential of the E15 proposed rule.

NCGA stands ready to work with the Administration to clear obstacles to higher blends of ethanol such as E15 and ensure a final rule works for the entire ethanol and fuel supply chain. Thank you for moving forward with overdue regulatory relief for higher blends of ethanol that benefits farmers, drivers and our environment. Please do not allow the RIN market proposal, which needs further review and consideration, to impede the E15 rule.

**SUPPLEMENTAL COMMENTS OF THE NATIONAL CORN GROWERS
ASSOCIATION**

**Modifications to Fuel Regulations to Provide Flexibility for E15; Modifications to RFS RIN
Market Regulations, 84 Fed. Reg. 10,584 (Mar. 21, 2019)**

Docket ID No. EPA–HQ–OAR–2018–0775

**THE TEXT, HISTORY, STRUCTURE, AND PURPOSE OF THE CLEAN AIR ACT SUPPORT
EXTENDING 1-PSI RVP WAIVER TO E15**

A. Reinterpretation of CAA § 211(h)(4)

NCGA firmly endorses EPA’s proposal to interpret § 211(h)(4) of the Clean Air Act as being applicable to ethanol blends containing at least 10 percent ethanol, including E15. Extending the 1-psi RVP waiver to E15 during the summer volatility control season will help foster competition and open the marketplace to a fuel that provides consumers higher octane, lower cost, and reduced tailpipe emissions. NCGA believes EPA’s justification for this interpretation is well supported by the Clean Air Act’s text, history, structure and purpose.

i. Text

Section 211(h)(4) provides: “For fuel blends containing gasoline and 10 percent denatured anhydrous ethanol, the [RVP] limitation under this subsection shall be one [psi] greater than the applicable [RVP] limitations established under paragraph (1).” A blend of gasoline and at least ten percent ethanol “contain[s] gasoline and 10 percent ... ethanol,” just as the statute requires. That is because E15, for example, contains 10 percent ethanol, as well as an additional five percent ethanol. EPA’s interpretation in the Proposed Rule of “containing” to mean “containing at least” is reasonable and well supported.¹²

ii. Legislative History

Although the maximum ethanol concentration at the time Congress enacted § 211(h)(4) was 10 percent, Congress indicated that it did not intend for 10 percent ethanol to serve as a permanent maximum concentration. Rather, Congress wanted the RVP waiver to “allow ethanol blending to continue to be a viable alternative fuel, with its beneficial environmental, economic, agricultural, energy security and foreign policy implications.”¹³ Consistent with this objective, and as noted by EPA, Congress used the phrase “at least” 10 percent ethanol when discussing the 1-psi waiver.¹⁴

As did EPA in promulgating the Phase I and II regulations prior to the Clean Air Act Amendments of 1990, Congress in 1990 also “recognized that to require ethanol to meet a 9-pound RVP would require the creation of a production and distribution network for sub-nine-pound gasoline. The cost of producing and distributing this kind of fuel would be prohibitive to

¹² See 84 Fed. Reg. 10,584, 10,591 (Mar. 21, 2019).

¹³ See *id.* at 10,592 (citing S. Rep. No. 101-228, at 3,495 (1989)).

¹⁴ *Id.* at 10,591-92.

the petroleum industry and would likely result in the termination of the availability of ethanol in the marketplace.”¹⁵ Nothing in the legislative history suggests any reason this rationale would apply only to E10 and not also to blends with higher ethanol concentrations subsequently shown to be compatible with motor vehicle emissions regulations and therefore granted waivers pursuant to § 211(f)(4). On the contrary, the reasons the Senate Report gave for extending the 1-psi waiver to gasoline ethanol blends up to 10 percent ethanol in 1990 equally weigh in favor of interpreting the 1-psi waiver to apply to E15 in 2019.

iii. Structure

Moreover, EPA correctly recognizes that the “deemed to comply” language of § 211(h)(4) confirms that Congress intended the RVP allowance under that provision to extend to all blends containing 10 percent ethanol.¹⁶ The “deemed to comply” defense in the second clause of § 211(h)(4) does not use the words “10 percent” from the first clause; rather, it applies if, among other things, “the ethanol portion of the blend does not exceed its waiver condition under subsection (f)(4).” As EPA notes, the logical explanation for the different language in the two clauses of § 211(h)(4) is that the first clause establishes a *floor* of 10 percent, and the second clause establishes that any applicable waiver condition under § 211(f)(4) imposes a *ceiling* on the ethanol concentrations eligible for the compliance defense. Accordingly, by referencing the separate potential ceiling in § 211(f)(4), Congress was indicating that 10 percent ethanol is to be the minimum, not the maximum, volumetric requirement.

iv. Purpose

As noted above, in enacting § 211(h)(4), Congress wanted the RVP waiver to promote ethanol blending while avoiding unnecessary costs in producing and distributing lower RVP blendstocks.¹⁷ EPA’s proposed interpretation of § 211(h)(4) as setting the minimum level of ethanol content, rather than the maximum, achieves those objectives. Moreover, EPA’s prior interpretation of § 211(h)(4) over the past decades is largely inconsequential because the only waiver that came into effect for an ethanol blend under § 211(h) was for E10. The facts on the ground have changed significantly, however, since EPA allowed E15 for sale. In addition, E10 accounts for about 98% of gasoline in the market,¹⁸ and in 2014 EPA changed certification fuel used for emissions testing of new vehicles to E10. From a policy and factual perspective, there is no reason to retain regulatory requirements on RVP that prevent E15 from competing equally with E10 by requiring E15 to utilize a different gasoline blendstock in the summer than is required for E10. The existing interpretation that precludes regulatory parity for E15 compared to E10 is particularly inappropriate given that E15 produces lower tailpipe emissions than E10 and, as EPA acknowledges, has lower evaporative emissions as well.¹⁹

¹⁵ *Id.* at 10,592 (quoting S. Rep. No. 101-228 (1989)).

¹⁶ *Id.* at 10,592.

¹⁷ *Id.*

¹⁸ See U.S. Dep’t of Energy, Alternative Fuels Data Center, https://afdc.energy.gov/fuels/ethanol_blends.html.

¹⁹ 84 Fed. Reg at 10,592.

In sum, EPA's proposed interpretation of § 211(h)(4) would align with the best reading of the statute and with Congressional intent to protect the environment, increase U.S. energy independence, lower costs, and remove regulatory barriers to economic growth.

B. Regulatory Amendments

NCGA agrees with EPA's reasoning to extend the 1-psi waiver to ethanol gasoline blends of up to 15 percent. However, NCGA believes that in light of the existing partial waivers that allow up to 15 percent ethanol in gasoline, a more accurate interpretation would extend the 1-psi waiver to blends of 9.5 to 15 percent ethanol, rather than 9 to 15 percent, as stated in the Proposed Rule.²⁰ EPA's original reasoning for proposing in the 9 to 10 percent range might have been because the § 211(f)(4) waiver at the time limited ethanol content in gasoline to no more than 10 percent, and it is almost impossible to ensure exactly 10 percent ethanol via splash blending. At the time, a one percent margin was sufficient to facilitate splash blending without jeopardizing a violation of the § 211(f)(4) waiver condition. Now, however, the maximum ethanol concentration in gasoline is 15 percent, so if splash blending were to result in 10.5 percent ethanol, doing so would no longer exceed the waiver condition. Additionally, since EPA is correctly interpreting "contains 10 percent" to mean "at least 10 percent," it should also select a percentage that can round up to 10 percent.

C. Effects on Regulated Parties from Fuel and Fuel Additive Manufacturer Approach

Although EPA's interpretation of § 211(f)(4) provides a separate and independent basis for the proposed action, fuel and fuel additive manufacturers would be impacted differently than oxygenate blenders from the implementation of this approach. For this reason, NCGA favors EPA's proposed "sub sim" approach under § 211(f)(1), which would apply equally to such manufacturers and blenders. If EPA elects to finalize both approaches, however, NCGA encourages EPA to clarify that, because the fuel manufacturer interpretation is an alternative basis for the action, the sub sim provisions final rule would allow E15 to be lawfully blended by both fuel manufacturers and oxygenate blenders from the same gasoline blendstock that is used to make E10 during the summer. EPA acknowledged this in footnote 76, but NCGA believes the final rule should also state this clearly and directly.

D. E15 Made at Blender Pumps

NCGA requests that EPA reconsider its proposed approach to regulation of E15 made at blender pumps from E85 flex fuel containing natural gasoline. Many of the retail dispensers selling E15 today are, in fact, blender pumps that mix E85 and E10 together to make the finished fuel. This is due in part to the U.S. Department of Agriculture matching tens of millions of dollars of private investment for the deployment of ethanol blender pumps.²¹ Much of the E85 that is used to make E15 via blender pumps today contains natural gasoline hydrocarbon. Natural gasoline used as the hydrocarbon portion of E85 flex fuel is a cost-effective blendstock that meets Tier 3 sulfur standards. Under the Proposed Rule, however, E15 made from E85 containing natural gasoline would not qualify for the 1-psi RVP waiver, even if the finished fuel

²⁰ See *id.* at 10,593.

²¹ See 81 Fed. Reg. 80,831 (Nov. 16, 2016).

met applicable sulfur and benzene standards and had volatility of 10.0 psi or less. So long as the finished fuel would otherwise meet blend specifications, this seems unreasonable, especially because E15 made from E85 and E10 via a blender pump typically contains only about one percent natural gasoline.²²

Rather than effectively eliminate the use of natural gasoline as a hydrocarbon blendstock for E85 used at blender pumps to make E15, NCGA recommends that EPA adopt the more flexible approach to E15 made at blender pumps first proposed in the Renewables Enhancement and Growth Support (“REGS”) rule in 2016.²³ Under that approach, which EPA acknowledged in the Proposed Rule,²⁴ EPA proposed to allow entities who manufacture E15 at blender pumps to use PTDs to demonstrate compliance with applicable sulfur, benzene, and volatility requirements in lieu of performing batch testing. EPA correctly recognized that the existing regulatory regime for a “fuel manufacturer,” which was promulgated before the rise in blender pumps, is unwieldy and outdated as applied to blender pumps. NCGA believes the method proposed in the REGS package is a reasonable approach that preserves flexibility for blenders. NCGA therefore encourages the Agency to adopt the REGS approach for E15 produced at blender pumps, and to allow such blenders the opportunity to demonstrate compliance, rather than eliminate the possibility that they can.²⁵

E. Substantially Similar Interpretation

NCGA strongly supports EPA’s proposal to recognize E15 at either 9 psi or 10 psi as “substantially similar” to Tier 3 E10 certification fuel for purposes of § 211(f)(1). NCGA believes EPA’s reasoning for this proposed interpretation is supported by legal precedent and available scientific data concerning the three key considerations of emissions, materials compatibility, and driveability.²⁶

NCGA concurs with the statutory framework and history of sub sim interpretations outlined in the Proposed Rule. Section 211(f)(1) of the Clean Air Act prohibits manufacturers from “first introduc[ing]” a new fuel into commerce for general use in light duty motor vehicles unless it is “substantially similar to *any fuel*...utilized in the certification of *any model* year 1975, or subsequent model year, vehicle or engine.” (emphasis added). Under § 211(f)(4), EPA may waive that prohibition upon the manufacturer establishing that the fuel will not cause or contribute to a failure of any emissions control device to comply with the emission standards to which a vehicle was certified. Fuels that qualify as “sub sim” do not need a waiver, although they remain subject to regulation under Section 211(c)—such as the Misfueling Mitigation Rule in the case of E15.

²² Blender pumps typically make one gallon of E15 by combining 0.94 gallons of E10 (containing 9.8% ethanol, 0.2% natural gasoline denaturant, and 90.0% gasoline BOB) with 0.06 gallons of E85 (containing 83% ethanol and 17% natural gasoline). Thus, the finished E15 fuel contains 14.2% ethanol, 1.2% natural gasoline, and 84.6% gasoline BOB.

²³ See 81 Fed. Reg. 80,828, 80,862-80,870 (Nov. 16, 2016) (“EFF Blender Pump-Refiner Certification Option”).

²⁴ See 84 Fed. Reg. at 10,595.

²⁵ See *id.*

²⁶ See, e.g., 56 Fed. Reg. 5,352, 5,353-54 (Feb. 11, 1991) (discussing consideration factors); 46 Fed. Reg. 38,582, 38,583-84 (July 28, 1981) (same).

Because Congress did not define what it means for a fuel to be “substantially similar” to certification fuel or otherwise direct EPA to issue implementing regulations, EPA retains significant discretion to define what constitutes sub sim to certification fuel.²⁷ Here, because the term “substantially similar” is both inherently broad and undefined in the statute, EPA has significant discretion to adopt a “reasonable” interpretation as long as “doing so is reasonable, within the scope of the statutory delegation, and the departure from past precedent is sensibly explained.”²⁸

As EPA accurately explains in the Proposed Rule, the Agency uses two fuels in certification: [1] a standardized testing fuel which must have properties that meet specifications promulgated under the Act and [2] a mileage-accumulation fuel which must be representative of commercially available fuels.²⁹ The current “sub sim” definition resulted from a series of interpretative rules that EPA issued from 1980 to 2008 defining the physical and chemical characteristics of a fuel or fuel additive that is “substantially similar” to indolene (“E0”). As EPA explains in the Proposed Rule,³⁰ indolene was the gasoline formulation historically specified for light duty vehicle certification emissions testing until 2014, when EPA, recognizing the widespread use of E10 in the marketplace, updated the certification fuel from 9-psi E0 to 9-psi E10 in the Tier 3 rulemaking.³¹ Even though fuel used for emissions certification during this timeframe contained no ethanol, EPA’s definition of “substantially similar” gasoline included an oxygen content criterion of up to 2.0 percent oxygen by weight, which was later increased to 2.7 percent oxygen by weight.³² Under prior sub sim interpretative rules, this meant that gasoline-ethanol blends containing approximately 7.5 percent ethanol by volume (which equates to about 2.7 percent oxygen by weight) are sub sim to E0.³³

²⁷ See *NationsBank of N.C. v. Variable Annuity Life Ins. Co.*, 513 U.S. 251, 257 (1995) (“If the administrator’s reading fills a gap or defines a term in a way that is reasonable in light of the legislature’s revealed design, [a court will] give the administrator’s judgment controlling weight.”) (internal quotations omitted).

²⁸ *FedEx Home Delivery v. Nat’l Labor Relations Bd.*, 849 F.3d 1123, 1127 (D.C. Cir. 2017).

²⁹ 46 Fed. Reg. at 38,583.

³⁰ 84 Fed. Reg. at 10,597.

³¹ See 79 Fed. Reg. 23,414, 23,450 (Apr. 28, 2014).

³² 84 Fed. Reg. at 10,597.

³³ Under the current definition of “substantially similar,” a fuel or fuel additive will be treated as “substantially similar” to indolene if four criteria are met:

1. The fuel must contain carbon, hydrogen, and oxygen, nitrogen, and/or sulfur, exclusively, in the form of some combination of the following:
 - a. Hydrocarbons;
 - b. Aliphatic ethers;
 - c. Aliphatic alcohols other than methanol;
 - d. (i) Up to 0.3 percent methanol by volume; (ii) Up to 2.75 percent methanol by volume with an equal volume of butanol, or higher molecular weight alcohol;
 - e. A fuel additive at a concentration of no more than 0.25 percent by weight which contributes no more than 15 ppm sulfur by weight to the fuel.
2. The fuel must contain no more than 2.0 percent oxygen by weight, except fuels containing aliphatic ethers and/or alcohols (excluding methanol) must contain no more than 2.7 percent oxygen by weight.
3. The fuel must possess, at the time of manufacture, all of the physical and chemical characteristics of an unleaded gasoline as specified in ASTM Standard D 4814–88 for at least one of the Seasonal and Geographical Volatility Classes specified in the standard, with the exception of fuel introduced into commerce in the state of Alaska. For fuel introduced into commerce in the state of Alaska, all of the requirements of this section (3)

After EPA changed the standardized test gasoline used in vehicle certification from indolene to E10, certification fuel used in emission testing from that point forward has contained ten percent ethanol by volume (3.5 percent oxygen by weight). EPA never updated its sub sim interpretative rule, however, to increase the oxygen content by weight to reflect the change from 2.7 to 3.5 percent oxygen by weight. As a result, under the most recent sub sim interpretation from 2008, the current E10 gasoline utilized in light duty certification, which has 3.5 percent oxygen by weight, would not qualify as “sub sim” because it exceeds the current regulatory limit of 2.7 percent oxygen by weight. This absurd result underscores the need to revise EPA’s latest regulatory interpretation of which fuels qualify as “sub sim.”³⁴

As EPA acknowledges in the Proposed Rule,³⁵ there is a second fuel used in certification: service or mileage accumulation fuel that verifies the durability of a vehicle’s evaporative emissions control systems. Mileage accumulation fuel—which since 2004 must be representative of gasoline containing ethanol in the highest commercially available concentration of ethanol permissible—has effectively been E15 (5.5 percent oxygen by weight) since 2011, following EPA’s partial E15 waivers.³⁶

Although certification fuel historically has had an RVP of 9 psi, NCGA agrees with EPA’s recognition in the Proposed Rule that prior sub sim interpretations specified that a fuel need only to “meet ASTM standards in general, that is, not necessarily for every geographic location and time of year.”³⁷ In other words, so long as the fuel “possess[ed], at time of manufacture, all the physical and chemical characteristics of an unleaded gasoline as specified in ASTM D4814-88 for at least one of the Seasonal and Geographical Volatility Classes specified in the standard,” the fuel was “sub sim.”³⁸

Lastly, given the express reference in § 211(f)(1) to *any* fuel utilized in certification of any motor vehicle since 1975, NCGA agrees with EPA that the “sub sim” determination under § 211(f)(1) has a narrower scope than the “sub sim” waiver review under § 211(f)(4), and EPA

apply, with the exception of the test temperature for a maximum Vapor/Liquid Ratio (V/L) of 20, which shall be a minimum of 35 °C (95 °F) for the period from September 16 through May 31.

4. The fuel additive must contain only carbon, hydrogen, and any one or all of the following elements: Oxygen, nitrogen, and/or sulfur.

73 Fed. Reg. 22,277, 22,281 (Apr. 25, 2008).

³⁴ EPA correctly recognized in the Proposed Rule that it has not addressed what should be considered sub sim for Tier 3 certification fuel. 84 Fed. Reg. at 10,597.

³⁵ 84 Fed. Reg. at 10,597.

³⁶ *Id.* EPA clearly stated in the Tier 3 rulemaking that it expected E15 would become the fuel used for mileage accumulation certification:

For evaporative emissions, durability fuel requirements are the same as for exhaust emissions (as outlined above), plus an additional requirement in the provisions of § 86.1824-08(f), that the service accumulation fuel ‘contains ethanol in, at least, the highest concentration permissible in gasoline under federal law and that is commercially available in any state in the United States.’ . . . *Thus, we expect that E15 service accumulation fuel will be used for whole vehicle evaporative durability programs.*”

79 Fed. Reg. at 23,527 (emphasis added). Consequently, although EPA uses E10 certification fuel for purposes of its sub sim analysis, EPA could have used E15 as well – a comparison between identical fuels that would have simplified EPA’s analysis.

³⁷ See 84 Fed. Reg. at 10,597 (quoting 46 Fed. Reg. at 38,585 (July 28, 1981)).

³⁸ *Id.* (quoting 73 Fed. Reg. at 22,281 (April 25, 2008)).

need not demonstrate that E15 is sub sim to all certification fuels required and used historically.³⁹ EPA only must address what is sub sim to gasoline *currently* used in the vehicle certification process.

F. Technical Rationale for Sub Sim Interpretation

NCGA concurs with EPA’s proposed determination that E15 has “similar effects on emissions (exhaust and evaporative), materials compatibility, and driveability” as Tier 3 E10 certification fuel.⁴⁰ Although EPA correctly concludes that E15 produced from the same gasoline blendstock for oxygenate blending (“BOB”) as E10 would likely have “slightly less” evaporative emissions than E10,⁴¹ EPA’s review of studies focused on E15 exhaust emissions does not include several important analyses that properly consider the impact of fuel blending practices and test fuel parameters on tailpipe emissions. As discussed below, NCGA believes the technical rationale for a sub sim determination is even more robust than as described in the Proposed Rule. We encourage EPA to broaden and strengthen its review of available studies and data pertaining to E15 exhaust and evaporative emissions in the final rule.

i. Exhaust Emissions of E15 Are Sub Sim to E10 Certification Fuel.

NCGA agrees with EPA’s conclusion that exhaust emissions of E15 are substantially similar compared to E10 certification fuel.⁴² Recent scientific studies and analyses demonstrate that the inclusion of ethanol in gasoline provides net reductions in the emissions of key pollutants that endanger human health and contribute to ground-level ozone formation.⁴³

EPA Already Has Determined E15 Will Not Cause Emission Exceedances

The Proposed Rule correctly notes that, as part of the partial waiver EPA granted in 2010 under § 211(f)(4) for E15, EPA conclusively determined that for MY 2001 and newer vehicles E15 will not cause exhaust emissions exceedances (either long-term or immediate).⁴⁴ EPA relied on the Department of Energy’s Catalyst Study, other relevant test programs and studies, and

³⁹ See 84 Fed. Reg. at 10,598.

⁴⁰ See *id.* at 10,596.

⁴¹ *Id.* at 10,592.

⁴² See *id.* at 10,599.

⁴³ See Renewable Fuels Ass’n & Growth Energy, *California Multimedia Evaluation of Gasoline-Ethanol Blends between E10 and E30 Tier I Report*, Comments to California Air Resources Board, at 45 (Feb. 14, 2019) (“None of the E15 studies, whether done on California fuels or other US fuels found a statistically significant increase in any criteria pollutant. NOx, CO, PM mass emissions, or organic emissions (NMOG, THC, or NMHC depending on the study) were measured. Statistically significant decreases were found for NMHC, CO and potency weighted toxics, and a marginally significant decrease in NOx emissions due to changes in ethanol content in the fuel.”); see also James Anderson et al., *Issues with T50 and T90 as Match Criteria for Ethanol-Gasoline Blends*, 7 SAE Int. J. Fuels Lubr. 1027, 1031 (Nov. 2014) (“Numerous studies in which ethanol was splash-blended with a fixed gasoline blendstock have demonstrated reductions of vehicle exhaust emissions, particularly particulate matter (PM), non-methane hydrocarbons (NMHC), and the air toxics 1,3-butadiene and benzene. Particularly noteworthy is the reduction of PM emissions with the addition of ethanol, which has been demonstrated in many studies and is supported by fundamental combustion chemistry considerations.”) (citing eleven studies).

⁴⁴ See 84 Fed. Reg. at 10,598.

EPA's engineering assessment to conclude that E15 "will not cause or contribute to violations of the [durability and immediate] exhaust emissions standards."⁴⁵

Recent Data Confirms No Comparative Adverse Exhaust Emissions from E15

EPA cites the 2018 University of California, Riverside study, which is a more reliable indicator than the EPAct study or the MOVES model that was derived from the EPAct study. With aromatic content matched, the UC Riverside study showed the additional five volume percent ethanol in E15 (approximately an additional 2 weight percent oxygen) compared to E10 would cause no statistically significant difference in NO_x, non-methane hydrocarbons (NMHC), or PM.⁴⁶ Other studies, some of which were discussed in the Proposed Rule, demonstrate that E15, when compared to E10, results in lower exhaust emissions of carbon monoxide (CO), and has comparable emissions with respect to other pollutants (NO_x, NMOG).⁴⁷

⁴⁵ 76 Fed. Reg. at 4,663; *see also* 75 Fed. Reg. at 68,104-09 (discussing studies and data supporting conclusion that E15 does not result in adverse durability exhaust emissions impacts).

⁴⁶ *See* 84 Fed. Reg. at 10,599; *see* Georgios Karavalakis et al., *Impacts of Aromatics and Ethanol Content on Exhaust Emissions from Gasoline Direct Injection (GDI) Vehicles* (2018) (unpublished, University of California CE-CERT) (Chapter 3 discusses Emission Testing Results).

⁴⁷ Stefan Unnasch & Ashley Henderson, *Change in Air Quality Impacts Associated with the Use of E15 Blends Instead of E10*, Life Cycle Assocs. Rep. (2014) (literature review examining emissions of NO_x; CO; PM; nonmethane HC; ozone potential; and cancer risk from air toxics); *id.* at 6 ("The most significant changes from a change from E10 to E15 include a reduction in cancer risk from vehicle exhaust and evaporative emissions, a reduction in the potential to form ozone or photochemical smog, and a reduction in greenhouse gas (GHG) emissions."); Matthew A. Ratcliff et al., *Impact of Higher Alcohols Blended in Gasoline on Light-Duty Vehicle Exhaust Emissions*, 47 *Env'tl. Sci. & Tech.* 13,865, 13,868 (2013) (finding "alcohol blended fuels generally did not significantly affect NO_x, CO, or non-methane organic gases (NMOG) emissions. The largest effect was that E16 produced a statistically significant . . . 29% reduction in CO emission."); Robert L. McCormick et al., *Review and Evaluation of Studies on the Use of E15 in Light-Duty Vehicles*, Nat'l Renewable Energy Lab 32-34, 39-41 (Oct. 2013); Georgios Karavalakis et al., *The Impact of Ethanol and Iso-butanol Blends on Gaseous and Particulate Emissions from Two Passenger Cars Equipped with Spray-Guided and Wall-Guided Direct Injection SI (Spark Ignition) Engines*, 82 *Energy* 168 (2015); Georgios Karavalakis et al., *Impacts of Ethanol Fuel Level on Emissions of Regulated and Unregulated Pollutants from a Fleet of Gasoline Light-Duty Vehicles*, 93 *Fuel* 549 (2012).

The Renewable Fuels Association and Growth Energy recently developed comments for the California Air Resources Board comparing recent studies on the emissions impact of E15 compared to E10. The range of studies, which included vehicle model years from 2001-2017, showed decreases or no significant differences in NO_x, organic emissions, CO, PM, and potency weighted toxics, as shown in the table below.

TAILPIPE EMISSIONS STUDIES ON E15 VERSUS EITHER E10 OR E0 AS BASE FUEL

Study Name	Test Cycle	No. of Vehicles	Vehicle Model Years	Base Fuel and Blending Strategy	NO _x	Organic Emissions	CO	PM mass emissions	Potency Weighted Toxics
DOE Intermediate Fuel Blends	LA-92	13	2001-2007	E10 splash blend	No significant difference	No significant difference	No significant difference	Not tested	Not tested
DOE Catalyst Study	FTP	24	2003-2009	E0 splash blend	No significant difference	No significant difference		Not tested	Not tested
UC Riverside -1	UC and FTP	7	2007-2012	E10 match blend	No significant difference	No significant difference	No significant difference	No significant difference	No significant difference
UC Riverside -3	LA-92	5	2016-2017	E10 low aromatics splash blend			No significant difference	No significant difference	
UC Riverside -3	LA-92	5	2016-2017	E10 low aromatics match blend	No significant difference	No significant difference ¹⁰⁴	No significant difference	No significant difference	No significant difference
UC-Riverside-3	LA-92	5	2016-2017	E10 high aromatics match blend	No significant difference	No significant difference ¹⁰⁴	No significant difference	No significant difference	No significant difference
All Data (no. of datapoints for each pollutant in parentheses)	Various		2001-2017	Various	No significant difference (66)	NMHC: No significant difference (42) THC: No significant difference (29) NMOG: No significant difference (24)		No significant difference (24)	No significant difference (22)

Table 1. Tailpipe Emissions studies on E15 versus either E10 or E0 as base fuel⁴⁸

Moreover, approximately 90% of Tier 3 vehicles are warranted by the manufacturer for use of E15, which indicates that the vast majority of auto manufacturers do not believe that E15 will compromise the vehicle's critical emissions controls systems or result in exceedances of emissions standards.⁴⁹

⁴⁸ Solid arrows represent p values <.05, textured arrows represent p values between 0.05 and 0.1, for paired, two-tailed t-test. Studies listed are Keith Knoll et al., *Effects of Intermediate Ethanol Blends on Legacy Vehicles and Small Non-Road Engines*, Report 1 – Updated Feb. 2009, NREL/TP-540-43543 (DOE Intermediate Fuel Blends); Brian West et al., *Intermediate Ethanol Blends Catalyst Durability Program*, Feb. 2012, ORNL/TM-2011/234 (DOE Catalyst Study); Georgios Karavalakis et al., *Evaluating the regulated emissions, air toxics, ultrafine particles, and black carbon from SI-PFI and si-di vehicles operating on different ethanol and iso-butanol blends*, 128 Fuel 410-421 (2014) (UC Riverside-1 and UC Riverside-2); Georgios Karavalakis et al., *Impacts of Aromatics and Ethanol Content on Exhaust Emissions from Gasoline Direct Injection (GDI) Vehicles*, Apr. 2018 (UC Riverside-3).

⁴⁹ See RFA Analysis: Automakers Approve E15 in Nearly 90% of New 2018 Vehicles, Renewable Fuels Ass'n (Nov. 2017), <https://ethanolrfa.org/2017/11/rfa-analysis-automakers-approve-e15-in-nearly-90-of-new-2018-vehicles/>; RFA Analysis: Automakers Explicitly Approve E15 for More than 93% of New 2019 Vehicles, Renewable Fuels Ass'n (Oct. 2018), <https://ethanolrfa.org/2018/10/rfa-analysis-automakers-explicitlyapprove-e15-for-more-than-93-of-new-2019-vehicles/>.

EPA Act Study Conclusions Unreliable

NCGA cautions EPA from reading too much into the results of the EPA Act/V2/E-89 study⁵⁰ or the MOVES simulator, which was based on the EPA Act study's data. The experimental design of the EPA Act study included 27 different fuels, blended for 5 specific properties in such a way that the full reasonable range of each property was explored, but not all the possible different combinations (which would have required 240 different fuels). The study created unique match-blended fuels by adjusting the gasoline blendstock to hold constant select parameters, namely the distillation temperatures (T50 and T90, the temperatures at which fifty percent and ninety percent, respectively, of the fuel are vaporized). Because the addition of ethanol to gasoline blendstock reduces the blended gasoline's T50 and T90, the study added high distillate aromatic and saturated hydrocarbons to account for and reverse ethanol's effect on T50 and T90.

As a result, the match-blended fuels in the EPA Act/V2/E-89 study did not resemble actual ethanol-gasoline blends found in commerce. While the distillation temperatures between the test fuels were controlled, the addition of additional aromatics caused other inadvertent effects. For example, some fuels in the model contained unrealistic octane ratings—higher than would be available in the marketplace—due to the addition of high-distillate hydrocarbons. And because ethanol affects gasoline distillation in a non-linear fashion, increasing the T50 of blends containing more than 10 percent ethanol to match the T50 of E0 and E10 blends elevated T60-80 distillation temperatures. Higher upper distillation temperatures in the ethanol blends above E10 mean that more heat is needed to vaporize fuel components adequately, which generally results in incomplete combustion and greater pollution.

EPA's analysis of the results of the EPA Act study's emissions data suggest that the emissions of total hydrocarbon (THC), NMOG, NMHC, CH₄, NO_x, PM would increase, and CO would decrease with increasing ethanol content (between E0 and E20) should aromatic content, T50, T90 and vapor pressure be held constant. However, T50 is inversely correlated with ethanol content, as is aromatic content by simple dilution. Increasing aromatic content and T50 are also correlated with increasing THC, NMOG, NMHC, NO_x, PM emissions, potentially confounding any increase in emissions due to ethanol alone.

E15 Has Lower Ozone Forming Potential Compared to E10

EPA in the Proposed Rule omits studies showing that the organics emitted from a tailpipe will have a lower ozone-forming potential with E15 in comparison to E10. Researchers at the University of California, Riverside (UC Riverside) team evaluated emissions from two 2012 model year vehicles and found that the ozone reactivity for emissions from E15 was in fact *less* than those for E10 as shown in the figure below.

⁵⁰ EPA, Assessing the Effect of Five Gasoline properties on Exhaust Emissions from Light-Duty Vehicles Certified to Tier 2 Standards: Analysis of Data from EPA Act Phase 3 (EPA Act/V2/E-89), Final Report (Apr. 26, 2013), <https://www.epa.gov/moves/epactv2e-89-tier-2-gasoline-fuel-effects-study>.

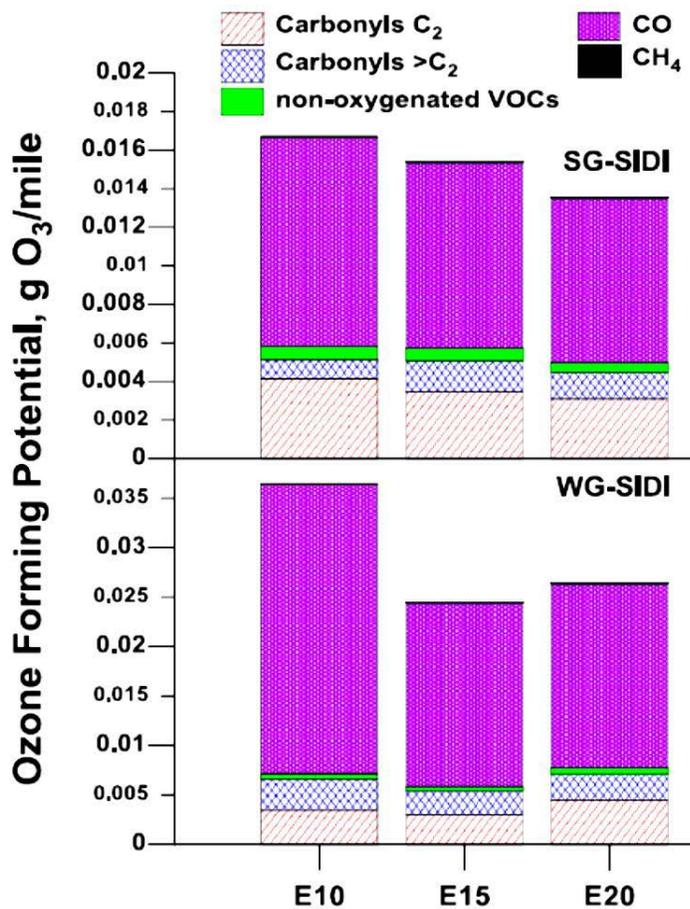


Figure 1. Ozone-forming potential of tailpipe emissions from vehicles using E10, E15, and E20.⁵¹

In its extensive study of flex fuel vehicle emissions from E6, E32, E59 and E85 fuels, the Coordinating Research Council found that the average ozone-forming potential decreased with increasing ethanol content of the fuels on the cold start test procedure, though the results were mixed on the US06 and Unified Cycle tests.⁵² Other researchers found a slight improvement in ozone-forming potential calculated from Maximum Incremental Reactivity values when E10 was compared to E0 in a Euro 4 vehicle.⁵³ Taken together, these results suggest that there will be no increase in ozone-forming potential with higher ethanol content fuel.

In sum, EPA has a substantial scientific basis for determining that, with respect to tailpipe emissions, gasoline containing 5.5 weight percent oxygen is “substantially similar” to current E10 certification fuel with 3.5 weight percent oxygen.

⁵¹ Georgios Karavalakis et al., *The impact of ethanol and iso-butanol blends on gaseous and particulate emissions from two passenger cars equipped with spray-guided and wall-guided direct injection SI (spark ignition) engines*, 82 Energy 168 (2015).

⁵² See CRC E-80, Exhaust and Evaporative Emissions Testing of Flexible-Fuel Vehicles, Final Report (Aug. 2011).

⁵³ Xin Wang et al., *Estimating Ozone Potential of Pipe-out Emissions from euro-3 to euro-5 Passenger cars Fueled with gasoline, Alcohol-Gasoline, Methanol and Compressed Natural Gas*, April 2016, SAE 2010-01-1009.

ii. Evaporative Emissions of E15 Are Substantially Similar to E10 Certification Fuel

EPA's historical precedent over almost 40 years has been that "sub sim" fuels need only comply with general ASTM specifications (i.e., any volatility class in ASTM D 4814–88) for volatility.⁵⁴ EPA reconfirmed this position in its most recent sub sim determination in 2008, and EPA should continue this approach in the final rule.⁵⁵ As a result, all restrictions on RVP derive from EPA's summertime gasoline volatility regulations and not the sub sim definition.⁵⁶ NCGA agrees that EPA's existing regulations promulgated under CAA §§ 211(c) and 211(h) are a sufficient mechanism to control the RVP of gasoline.⁵⁷

It is well established that when using the same base gasoline, E15 results in slightly lower evaporative emissions than E10.⁵⁸

But to the extent that EPA offers an alternative sub sim position that E15 at 9-psi is sub sim to E10 at 9-psi and the 1-psi tolerance under § 211(h) otherwise overrides any RVP limitation under § 211(f), NCGA agrees that E15 at 9.0 psi RVP would have nearly identical evaporative emissions to E10 at 9.0 psi RVP from refueling, diurnal, and running loss emissions sources. Under either approach, E15 (at 10 psi or 9 psi) is sub sim to E10 certification fuel.

iii. EPA Has Previously Resolved Materials Compatibility and driveability Concerns

NCGA supports EPA's analysis in the Proposed Rule that the partial waivers for E15 granted under § 211(f)(4) conclusively determined that E15 will not result in materials compatibility issues that lead to exhaust or evaporative emission exceedances or in driveability issues.⁵⁹

It is implausible that components in modern vehicles—many of which are warrantied⁶⁰ for use of E15 and entered the market after EPA's approval of E15—are less compatible with ethanol blended gasoline than the MY2001 and newer vehicles that EPA already concluded in 2010 and 2011 do not have such issues.

G. Continued Use of "Deemed to Comply" Provision

EPA solicited comment on whether the "deemed to comply" provision of § 211(h)(4)(B) would maintain any relevance if EPA were to determine that E15 is sub sim to E10 certification fuel for purposes of § 211(f)(1). NCGA believes that even in such a circumstance the deemed to comply provision retains importance. Arguably, even if the sub sim determination supersedes the § 211(f)(4) waiver, the sub sim determination does not explicitly revise or rescind the §211(f)(4)

⁵⁴ See 84 Fed. Reg. at 10,600.

⁵⁵ See *id.*

⁵⁶ See 56 Fed. Reg. at 5,354; 84 Fed. Reg. at 10,600.

⁵⁷ 84 Fed. Reg. at 10,600.

⁵⁸ See, e.g., 75 Fed. Reg. at 68,117; 76 Fed. Reg. at 4,680 n. 37 (noting that E15 "will reduce actual in-use evaporative emissions compared to E10, the fuel it is expected to replace").

⁵⁹ See 75 Fed. Reg. at 68,097; see also 76 Fed. Reg. at 4,681-82 ("[T]he Study did not uncover any emissions deterioration problems with E15 in comparison to E0 that would result in materials compatibility issues....The Agency's review of the data and information from the different test programs finds no specific reports of driveability, operability of [On-board Diagnostic] issues across many different vehicles and duty cycles including lab testing and in use operation.").

⁶⁰ See *supra*, note 27.

waiver.⁶¹ But in any event, the deemed to comply provision certainly would “ease the demonstration burdens” for entities selling E15.⁶² More testing would significantly increase the cost of compliance without affecting fuel quality. Lastly, and importantly, the deemed to comply provision should be given continued effect because of the potential implications for higher ethanol blends in the future. For example, if EPA were to grant a § 211(f)(4) waiver for blends of gasoline and 20 percent ethanol at a later date based on new information, use of the deemed to comply provision would greatly reduce compliance risk and facilitate growth of the market.

H. Potential Conditions to § 211(f)(1) Interpretative Rulemaking

NCGA opposes conditions in a “sub sim” interpretative rule unrelated to fuel quality characteristics or that are more restrictive than any conditions currently applied to E15 as a consequence of the 211(f)(4) partial waivers or the MMR under § 211(c).⁶³ As EPA admits in the Proposed Rule, “the language of CAA sec. 211(f)(1) does not address whether and how EPA can restrict its determination that a particular fuel is ‘substantially similar’ to a certification fuel.”⁶⁴ NCGA believes that emissions, driveability, and materials compatibility data show that additional restrictions to the sub sim determination beyond those in the E15 waiver or MMR are not warranted. To the extent that EPA seeks to impose additional conditions beyond those in the partial waivers or the MMR, § 211(c) provides the proper authority to regulate, control or prohibit the “introduction into commerce”—and not this interpretative rule under §§ 211(f) and (h).

i. ASTM Standard D4806

NCGA acknowledges that an allowable underlying assumption of EPA’s sub sim determination could be that the ethanol in the blend complies with ASTM Standard D4806. This addresses a key aspect of the sub sim determination: the characteristics of the fuel being compared to certification fuel.

ii. Misfueling Mitigation Conditions

Other conditions on which EPA invited comment are unrelated to fuel quality or are duplicative of existing regulations. As EPA acknowledged in the Proposed Rule, EPA has already put into place largely parallel restrictions in the Misfueling Mitigation Rule pursuant to its § 211(c) authority.⁶⁵ The individual elements of a Misfueling Mitigation Plan (labeling, surveys, and documentation of ethanol content on product transfer documents) are already codified in EPA’s regulations and would not be impacted by the proposed action. Incorporating those labeling, survey, and product transfer documentation conditions in this interpretative rule might be duplicative, but NCGA does not oppose such an action—so long as EPA does not add new conditions not already in the E15 waiver or the MMR.

⁶¹ See 84 Fed. Reg. at 10,588 (“EPA is not proposing to revise the E15 partial waivers under CAA sec. 211(f)(4)....”).

⁶² *Id.* at 10,601.

⁶³ See *id.* at 10,603.

⁶⁴ *Id.* at 10,602.

⁶⁵ See 40 C.F.R. part 80, subpart N.

Regarding the need for additional E15 misfueling measures, NCGA agrees with EPA's conclusion in the Proposed Rule that "additional misfueling measures are unnecessary at this time and outside the scope of this proposed action."⁶⁶ The emissions data discussed above in Section II.F., some of which included Tier 2 vehicles, shows that E15 does not pose an emission or compatibility concern to MY2001 and newer light duty vehicles. Because retailers, many of whom are small businesses, have already invested in new infrastructure to facilitate higher ethanol blends, EPA correctly acknowledged that additional misfueling mitigation measures would impose "a significant burden" on these retailers to upgrade fuel dispensers to implement physical barriers to E15 use.⁶⁷

iii. Tier 3 Vehicles

It would be inappropriate in this interpretative rule for EPA to conclude that E15 sub sim to Tier 3 E10 certification fuel can only be used in vehicles certified using Tier 3 E10 certification fuel.⁶⁸ There is no precedent on the issue, and NCGA strongly discourages EPA from limiting the sub sim determination only to those vehicles certified on E10. Aside from the absence of any legal basis for such a limitation, doing so would create a host of practical complications. Under EPA's current rule, various fuels are allowed into commerce for general use as sub sim to indolene (E0). But EPA's Tier 3 rule phases out indolene for use in vehicles certification. Reflexively limiting a sub sim fuel's general use⁶⁹ only in the vehicles on which they were certified could invite additional complicated labeling and use restrictions for Tier 3 vehicles in addition to those required under the MMR. And EPA has never indicated that a MY2019 Tier 3 vehicle certified on E10 cannot use a fuel that is sub sim to indolene, such as E0 or E5 (which has under 2.7 weight percent oxygen, consistent with the current, though outdated, sub sim interpretative rule). Nor should EPA make such a limiting determination here.

In this unique case, EPA has already determined in its previous E15 partial waivers under § 211(f)(4) that use of E15 in MY2001 and newer light-duty motor vehicles, light-duty trucks, and medium duty passenger vehicles would not cause those vehicles to exceed their emissions standards or cause driveability or materials compatibility issues. As a result, EPA has considered the impact of E15 not merely on Tier 3 vehicles but on the entire vehicle fleet. Limiting the sub sim determination to Tier 3 vehicles would contradict what EPA already determined in the E15 partial waiver. Due to the unique factual circumstances here, where the §211(f)(4) waiver analysis preceded the certification fuel change and sub sim determination, EPA need not decide

⁶⁶ 84 Fed. Reg. at 10,593.

⁶⁷ *Id.* at 10,603.

⁶⁸ See 84 Fed. Reg. at 10,602. Such an interpretation also ignores the statutory language basing a sub sim comparison to "any fuel or fuel additive utilized in the certification of any model year 1975, or subsequent model year, vehicle or engine..." 42 U.S.C. § 7545(f)(1)(A) (emphasis added). EPA acknowledges that E15 is used for purposes of certifying materials compatibility. See *supra* at 8-9; 46 Fed. Reg. at 38,583; 84 Fed. Reg. at 10,597. "Any fuel" arguably could include fuel used for materials compatibility certification.

⁶⁹ Because § 211(f)(1) allows the introduction into commerce "for general use" of any fuel or fuel additive that is sub sim to a fuel or fuel additive utilized in certification, restricting the sub sim determination in the final rule only to vehicles certified on Tier 3 E10 certification fuel in the would—in the absence of a conclusion regarding the incompatibility of the proposed sub sim fuel with the vehicle—improperly contravene Congress's explicit allowance of the sub sim fuel for "general use."

in this interpretative rule whether a sub sim determination necessarily means that the fuel can be used in all vehicles in the fleet.

I. Criteria Pollutants and Air Toxics

NCGA concurs with EPA's general conclusions that E15 will have favorable impacts to criteria pollutants and air toxics compared to E10. EPA's own fuel trends data strongly suggest a correlation between increased ethanol blending and lower aromatic content in gasoline.⁷⁰ Average aromatic content dropped from 28.5% to 21.76% between 2000 and 2016.⁷¹ In other words, as E10 use became more widespread, refiners reduced average aromatic content significantly.⁷² Indeed, EPA has recognized that "[e]thanol's high octane value has also allowed refiners to significantly reduce the aromatic content of the gasoline, a trend borne out in the data."⁷³ And as EPA acknowledged in the Proposed Rule, "During the rapid expansion of E10 blending between 2007–2012, aromatics levels were observed to decline by a few volume percent while pump octane levels stayed constant."⁷⁴ This is a critical factor because even a small reduction in aromatics results in beneficial impacts to air emissions.⁷⁵

J. Federalism

Although the Proposed Rule does not directly address preemption apart from a footnote,⁷⁶ NCGA requests that EPA provide notice of the preemptive effect of its actions in the Final Rule. Section 211(c)(4)(A) preempts state laws regulating a characteristic or component of gasoline when the following two criteria are satisfied: (1) EPA has promulgated regulations controlling the characteristic or component in question under § 211(c)(1), and (2) the state law must be for purposes of motor vehicle emissions control.⁷⁷ In this case, EPA has promulgated regulations on several occasions controlling gasoline volatility and ethanol content under section 211(c)(1), and state volatility regulations serve the purposes of motor vehicle emissions control. Such a pronouncement by EPA would provide needed clarity to states.

K. Severability

Section II (extension of 1-psi RVP waiver) and Section III (RIN market reforms) of the Proposed Rule are severable from one another because they are based on separate legal authorities,⁷⁸ serve different purposes, and operate entirely independently of each other.⁷⁹ The

⁷⁰ See EPA Fuel Trends Report: Gasoline 2006 – 2016, 26 (Oct. 2017).

⁷¹ *Id.*

⁷² *Id.*

⁷³ *Id.*

⁷⁴ 84 Fed. Reg. at 10,604.

⁷⁵ See James Anderson, *supra* note 34 at 1031 ("Numerous studies in which ethanol was splash-blended with a fixed gasoline blendstock have demonstrated reductions of vehicle exhaust emissions, particularly...the air toxics 1,3-butadiene and benzene.").

⁷⁶ 84 Fed. Reg. at 10,595.

⁷⁷ See 42 U.S.C. § 7545(c)(4)(A).

⁷⁸ EPA's authority for Section II derives from CAA § 211(c) and (f); by contrast, EPA's authority to establish and regulate the credit market for renewable fuels is § 211(o).

⁷⁹ See *Davis Cty. v. EPA*, 108 F.3d 1454, 1459 (D.C. Cir. 1997).

more time sensitive portion of the rule, Section II, can be finalized without affecting the RIN market reform section.

The severability of the Proposed Rule has important implications for the timing of the Final Rule and any legal challenges that might be brought against the Rule. First, to the extent it becomes apparent to EPA that the entire rule cannot be finalized by that date, the more time-sensitive portion of the rule—Section II’s RVP waiver provisions—should be finalized without affecting the RIN market reform section. Second, the extent a successful challenge is mounted only against the RIN reform provisions in Section III of the Proposed Rule, the RVP waiver