Comments of
Urban Air Initiative; Clean Fuels Development Coalition; 25x’25; Glacial Lakes Energy, LLC; Siouxland Ethanol, LLC; ICM, Inc.; Nebraska Ethanol Board; Nebraska Ethanol Industry Coalition; South Dakota Farmers Union; North Dakota Farmers Union; Minnesota Farmers Union; Montana Farmers Union; and Wisconsin Farmers Union

On EPA’s Request for Comment
On the Regulatory Reform Task Force’s
Evaluation of Existing Regulations

Docket ID No. EPA-HQ-OA-2017-0190


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INTRODUCTION

Urban Air Initiative; Clean Fuels Development Coalition; 25x’25; Glacial Lakes Energy, LLC; Siouxland Ethanol, LLC; ICM, Inc.; Nebraska Ethanol Board; Nebraska Ethanol Industry Coalition; South Dakota Farmers Union; North Dakota Farmers Union; Minnesota Farmers Union; Montana Farmers Union; and Wisconsin Farmers Union submit these comments, respectfully requesting that EPA repeal and replace rules that have unreasonably capped ethanol’s market potential.\(^1\) EPA’s counterproductive regulatory barriers have prevented ethanol’s superior automotive and environmental values from driving its continued growth in the U.S. fuel market as a source of clean octane for today’s motor vehicles and the highly efficient vehicles that increased ethanol blending would enable in the near future. As a result, EPA’s regulatory barriers have inhibited job creation in the ethanol industry, imposed costs without countervailing benefits, and created serious inconsistencies in regulatory policy.\(^2\) By repealing and replacing these outdated rules, EPA would carry out the President’s Executive Order on regulatory reform and air quality,\(^3\) as well as the President’s other Executive orders in support of energy independence and American agriculture.\(^4\)

I. THE COMMENTERS’ INTEREST

Urban Air Initiative is a nonprofit social welfare organization dedicated to improving fuel quality in order to reduce the public health risks posed by vehicular emissions, especially in urban areas where citizens are exposed to the highest levels of mobile source pollution.

The Clean Fuels Development Coalition was established in 1988 and works with auto, agriculture, and biofuels interests in support of a broad range of energy and environmental programs.

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\(^2\) Id.


25x'25 is a diverse alliance of agricultural, forestry, environmental, conservation, and other organizations and businesses that are working collaboratively to advance the goal of securing 25 percent of the nation's energy needs from renewable sources by the year 2025.

Glacial Lakes Energy, LLC, was formed by the Glacial Lakes Corn Processors. Glacial Lakes Corn Processors is a South Dakota cooperative with 4,100 shareholder/investors who reside primarily in eastern South Dakota. Glacial Lakes is the sole owner of two large ethanol production facilities that annually produce over 240 million gallons of high-octane, clean-burning ethanol. Glacial Lakes' purpose is to create value for South Dakota’s rural economy by returning dollars to the local economy and by providing good, quality jobs for its citizens.

Siouxland Ethanol, LLC, is a renewable fuel producer currently engaged in the production of ethanol for fuel.

ICM, Inc., is a designer and builder of ethanol plants, and a supplier of proprietary equipment and process technology to ethanol plants and other biofuels facilities.

The Nebraska Ethanol Board is a state agency supporting ethanol programs throughout the state, and assisting the industry with a range of technical marketing and regulatory issues.

The Nebraska Ethanol Industry Coalition is a non-profit organization of ethanol producers, supporters, and related industries working to support ethanol production and utilization in Nebraska and nationwide.

South Dakota Farmers Union, North Dakota Farmers Union, Minnesota Farmers Union, Montana Farmers Union, and Wisconsin Farmers Union are nonprofit organizations that work to promote the interests of farmers, ranchers, and their families, including those who grow corn for use in ethanol fuel blends, in their respective states.

II. BACKGROUND

The only reason ethanol has not yet achieved a greater demand-driven share of the fuel market is that unnecessary EPA regulations have irrationally blocked a market for mid-level ethanol fuel blends. Under free market conditions, ethanol’s highest and best use would be as a source of clean octane. Instead, ethanol has been unnecessarily confined to E10—gasoline with 10% ethanol—with the excess senselessly relegated to E85—a fuel that
gives lower mileage and no compensating benefits for drivers. As explained below, EPA can comply with Executive Order 13,777, by repealing and replacing outdated regulatory barriers that have blocked a market for highly efficient next-generation vehicles and the high-octane fuels they require.5

III. EPA SHOULD REPEAL UNNECESSARY REGULATORY BARRIERS THAT LIMIT DEMAND FOR ETHANOL.

Ethanol is a cost-effective octane enhancer with low emissions. Because of the demand for more fuel-efficient vehicles, automakers need high-octane fuel to design next-generation engines. Ethanol producers would supply the needed octane to produce these engines if only EPA removed outdated regulatory barriers that constrain ethanol blending.

In its 2014 Tier 3 Rule, EPA acknowledged that E30—gasoline blended with 30% ethanol—“could help manufacturers who wish to raise compression ratios to improve vehicle efficiency as a step toward complying with [EPA’s greenhouse gas and fuel efficiency] standards. This in turn could help provide a market incentive to increase ethanol use beyond E10 and enhance the environmental performance of ethanol as a transportation fuel by using it to enable more fuel efficient engines.”6 EPA also recognized that considering fuels and vehicles together as a system “enables emission reductions that are both technologically feasible and cost effective beyond what would be possible looking at vehicle and fuel standards in isolation.”7

Auto manufacturers have endorsed the benefits of a higher ethanol fuel. In 2011, the Auto Alliance “recommend[ed] increasing the minimum gasoline octane rating, commensurate with increased use of ethanol” to “help achieve future requirements for the reduction of greenhouse gas emissions.”8

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7 Id. at 23417.

Likewise, in its 2013 comments on the Tier 3 Rule, Ford agreed with EPA that “increased octane rating from increased ethanol content has the potential to allow for fuel economy, performance and emissions improvements through more efficient engine designs.”9 Mercedes commented that “[o]ctane is the single most important property of gasoline when determining engine design,” and “[h]igher octane fuels permit higher compression ratios which directly improve efficiency while downsizing engines also results in greater fuel efficiency.”10 Even more recently, during EPA’s Mid-Term Evaluation of its 2022-2025 greenhouse gas and fuel efficiency standards, the Auto Alliance pointed out that higher octane fuel “is a key enabler for the next phase of advanced engines.”11 Endorsing a systems approach, the Alliance stressed that “[t]he co-design of fuels and engines is an important pathway to improve fuel economy[,]” urging EPA to “bring[] high octane fuels to market that are aligned with future engine technologies[.]”12

Despite the universally acknowledged efficiency and emissions benefits of midlevel ethanol blends, auto manufacturers have not produced the vehicles needed to realize these benefits, and the fuel is not universally available. That is because EPA rules have restricted the use of such fuel in the certification of new vehicles and in the market. EPA can and should repeal and replace these counterproductive rules to open the fuel market to competition.


In its comments describing the efficiency benefits of vehicles designed for midlevel ethanol blends, Ford Motor Company noted that these next-generation vehicles are “already

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10 Mercedes-Benz USA, EPA-HQ-OAR-2011-0135-4676 (June 28, 2013), at 3.
12 Id.
found in Europe,” and “the introduction of higher octane rated/intermediate level ethanol blend fuel would allow for a faster introduction of more efficient vehicle designs from Europe . . . without the need for significant design changes.”

Instead of facilitating the marketability of these new high-efficiency vehicles, current EPA rules impede manufacturers from certifying new vehicles on a mid-level ethanol fuel, and they prevent retailers from selling it.

EPA should remove counterproductive regulatory barriers, and let the market drive innovation. That would mean letting manufacturers certify new vehicles on an alternative mid-level ethanol certification fuel—like E25—so that vehicle manufacturers could build and sell vehicles that are allowed to use the fuel.

In its Tier 3 Rule, EPA discouraged applications for new test fuels by purporting to require an automaker to demonstrate that a proposed alternative test fuel is already “readily available nationwide.” That was an impossible requirement for a new fuel. In subsequent litigation, however, EPA stated it has discretion to grant applications for test fuels that are not yet commercially available. But EPA has not formally revised the relevant rule to align with the Agency’s assurances in litigation.

EPA should repeal and replace its alternative certification fuel rule to clearly state—as the Agency has already conceded in litigation—that an auto manufacturer need not demonstrate that a proposed alternative certification fuel is currently available in commerce

13 Ford Comments, supra note 9, at 17.

14 Current EPA rules purport to require that a fuel be “commercially available” before it may be approved to certify new vehicles for compliance with emissions and efficiency rules. 40 C.F.R. § 1065.701(c). But EPA has interpreted the “sub-sim” law, 42 U.S.C. § 7545(f), to prohibit the introduction in commerce of fuel with higher levels of ethanol than the existing certification fuel. See infra. EPA’s interpretation and application of these statutory and regulatory provisions created a regulatory catch-22, making it impossible to test fuels that are not already commercially available.

15 Tier 3 Rule, 79 Fed. Reg. 23414 (Apr. 28, 2014) (interpreting 40 C.F.R. § 1065.701(c)).

16 EPA Response to Pet’n for Panel Reh’g at 7 n.3, Energy Future Coalition v. EPA, No. 14-1123 (Sept. 21, 2015) (“The Agency has ample discretion to consider requests on a case-by-case basis, and may evaluate trends and future market projections when considering whether to approve an alternative test fuel that is not currently on the market.”).

17 See 40 C.F.R. § 1065.701(c).
nationwide. It should suffice for a manufacturer to declare, based on its judgment and experience, that the requested fuel would likely be marketable in the future. The rule should also make clear that EPA may approve such a certification fuel for vehicles that also run on ordinary gasoline, as dual-fueled vehicles do by definition. Clarifying the rule in this way will encourage auto manufacturers to apply for a new certification fuel and build more efficient, cleaner, and cost-effective vehicles.

The regulatory barriers posed by EPA’s alternative certification fuel rule are explained in greater detail in an appendix to these comments.18

B. EPA Should Repeal and Replace Its Erroneous and Outdated Interpretation of the Sub-Sim Law as Capping Ethanol Use in Existing Vehicles.

EPA misinterprets the Clean Air Act to limit the concentration of ethanol that may be blended into gasoline for use in gasoline-fueled vehicles.19 Current EPA rules prohibit the sale of midlevel ethanol blends in gasoline-fueled vehicles produced before model year 2001.20 EPA’s proposed Renewables Enhancement and Growth Support Rule (the REGS Rule) would go further—prohibiting the sale and (for the first time) the use of gasoline containing more than 15% ethanol in any gasoline-fueled vehicle.21

EPA’s ban on higher concentrations of ethanol is based on a misinterpretation of the “sub-sim” law, section 211(f) of the Clean Air Act. That law restricts the sale of fuel additives that are not “substantially similar” to additives in the EPA-approved test fuels used to certify new vehicles.22 But ethanol is already used in an EPA-approved test fuel and therefore satisfies the “substantially similar” requirement: As of 2017, the gasoline

20 See 40 C.F.R. § 80.1504(a)(1). But cf. 56 Fed. Reg. 5352 (Feb. 11, 1991) (interpretive rule limiting the oxygen content of gasoline to 2.7% by weight, equivalent to significantly less than 10% ethanol).
certification fuel contains 10% ethanol. However, EPA says it “would need to approve a new waiver request [under the sub-sim law] for E16 or other higher-level ethanol blends to be used in gasoline vehicles.” That interpretation cannot be squared with the plain meaning of the statute.

EPA’s misinterpretation of the sub-sim law evades the statutory requirements for regulating fuels. Under section 211(c), EPA must demonstrate that ethanol harms public health or emissions control devices before the Agency may limit its concentration in gasoline. EPA has not attempted to make this demonstration, and the best available science demonstrates that adding ethanol to gasoline reduces emissions of harmful pollutants.

By misinterpreting the sub-sim law, EPA has unfairly shifted its legal burden to ethanol producers, requiring them to prove (contrary to section 211(c)) that a given concentration of ethanol will not cause a vehicle’s emissions control system to fail. Only then would EPA grant a waiver of the sub-sim law and allow the fuel to be sold.

Urban Air Initiative (UAI) and a broad coalition of ethanol plants and farming groups have filed comments asking EPA to correct its erroneous interpretation of the sub-sim law and to affirm that the law does not prohibit the use of mid-level ethanol blends in gasoline-fueled cars. The proposed rule’s purpose is to “facilitate further expansion of ethanol blended fuels,” but codifying EPA’s mistaken ban on mid-level ethanol blends would have the opposite effect. EPA should repeal prior rules and guidance misinterpreting the sub-sim law to limit the concentration of ethanol in gasoline, and replace them with a rule that correctly interprets the sub-sim law according to its plain meaning: it cannot limit ethanol blending, because ethanol is a fuel additive used in certification.

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23 40 C.F.R. § 1065.710(b)(2).
24 Proposed REGS Rule, supra note 21, 81 Fed. Reg. at 80831.
26 Id. at 80831.
27 See supra note 20.
EPA’s misinterpretation of the sub-sim law is explained in greater detail in an appendix to these comments.\textsuperscript{28}

C. EPA Should Repeal and Replace Its Irrational RVP Rule that Limits the Viability of E15 and Mid-Level Ethanol Blends.

Even for ethanol blends that are not constrained by EPA’s interpretation of the sub-sim law, the Agency’s outdated RVP rule limits the times of year in which they may be used. The result is that most drivers today have no access to E15, even though, for several years, E15 has been approved for use in Model Year 2001 and newer vehicles.\textsuperscript{29} That is because EPA has needlessly interpreted the Clean Air Act to deprive higher ethanol blends of the benefit of a partial waiver of the Reid Vapor Pressure (RVP) limit, a waiver that—by statute—ought to apply to all gasoline containing at least 10\% ethanol.\textsuperscript{30}

RVP is a measure of a fuel’s tendency to evaporate. In general, fuel must have an RVP of 9 psi or less. But under section 211(h)(4) of the Clean Air Act, a less stringent standard of 10 psi governs “fuel blends containing gasoline and 10 percent denatured anhydrous ethanol.”\textsuperscript{31} EPA interprets this to apply only to gasoline containing 9 or 10 percent ethanol, effectively inserting the phrase \textit{no more than} into the statute. But the text of the statute hardly requires that result; particularly given the statutory context and the properties of ethanol blends in excess of E10, the text makes better sense if it is read as encompassing fuel blends that contain at least 10 percent ethanol.

EPA’s past interpretation is unreasonable, because fuel’s evaporative tendency diminishes with increasing levels of ethanol over 10\%. In other words, E15 has lower evaporative emissions than E10 does. But, as a result of EPA’s double standard, retailers must stop selling E15—an otherwise legal fuel, with lower RVP than E10—during certain times of year or else use a separate low-vapor-pressure gasoline blendstock for E15. Thus, EPA regulations have artificially depressed the amount of clean-octane ethanol in the

\textsuperscript{28} See Appendix B, Repealing and Replacing EPA’s Interpretation of the Sub-Sim Law.

\textsuperscript{29} Partial Grant of Clean Air Act Waiver Application Submitted by Growth Energy To Increase the Allowable Ethanol Content of Gasoline to 15 Percent, 76 Fed. Reg. 4662 (Jan. 26, 2011).

\textsuperscript{30} \textit{Id.} at 4675.

\textsuperscript{31} 42 U.S.C. § 7545(h)(4).
market, despite the economic and environmental benefits that would come with increased ethanol consumption.

This issue is also relevant to blends over E15. EPA’s interpretation of the one-pound waiver would irrationally limit the use of E25 as well, even though E25 is an even cleaner (and more efficient) fuel with less evaporative emissions and lower RVP than both E10 and E15. Maintaining EPA’s unnecessary and counterproductive interpretation of the waiver provision would delay commercial adoption of the fuel the auto industry needs for the next generation of highly efficient engines.

EPA should repeal its rule arbitrarily limiting the one-pound waiver to blends of no more than 10% ethanol. EPA’s legal authority to reinterpret the one-pound waiver to extend to higher ethanol blends is explained in greater detail in an appendix to these comments.  

D. EPA Should Repeal and Replace Its Inaccurate Fuel Economy Formula.

EPA should repeal and replace its outdated fuel economy formula. EPA has admitted that part of its fuel efficiency formula is erroneous and that it unfairly penalizes fuel with ethanol in it; but EPA did not take steps to fix the problem. The problem is an important one for automakers that face increasingly stringent fuel economy standards, and it discourages them from developing high-efficiency engines that require higher octane ratings, which for present purposes means higher ethanol content, although that could change with new technology.

In brief, the fuel-economy calculation contains an “R-factor,” which is intended to make fuel economy testing on today’s fuel equivalent to fuel economy testing in 1975 by adjusting for the lower energy content of ethanol.  But as EPA has acknowledged, the current EPA-mandated R-factor of 0.6 is erroneous, and fails to achieve its statutory

32 See Appendix C, Repealing and Replacing EPA’s Limit on Ethanol’s One-Pound RVP Waiver.
33 See 26 U.S.C. § 4064(c) (“Fuel economy . . . shall be measured in accordance with testing and calculation procedures . . . utilized by the EPA Administrator for model year 1975 . . . or procedures which yield comparable results.”).
purpose.\textsuperscript{34} The auto industry has asked EPA for an R-factor of 1.0.\textsuperscript{35} In response, EPA has acknowledged that the current R-factor is wrong and suggested that a corrected value might lie “between 0.8 and 0.9.”\textsuperscript{36}

Although EPA has promised to fix the R-factor as necessary,\textsuperscript{37} the Agency has failed to act.

More fundamentally, the current fuel economy formula fails to account for the reduction of petroleum consumption that is achieved by the ethanol portion of gasoline. Under the Energy Independence and Security Act of 2007 (EISA), EPA has authority to promote energy independence by “decid[ing] on the quantity of other fuel that is equivalent to one gallon of gasoline.”\textsuperscript{38} EPA has relied on that authority to calculate a fuel efficiency credit for electric vehicles, thus making compliance easier for auto manufacturers.\textsuperscript{39} EPA should treat ethanol no differently than electricity for this purpose, treating (for example) gasoline with 10% ethanol (E10) as equivalent to 90% of a gallon of gasoline for purposes of fuel economy compliance.


\textsuperscript{37} 79 Fed. Reg. at 23531 (“While there has been some data evaluated to assess the impact of changing the emission test fuel on the ‘R’ factor, EPA did not propose a value in the NPRM and specifically stated that we would continue to investigate this issue and if necessary address it as part of a future action, as opposed to changing it in the Tier 3 final rule.”); id. at 23532 (“EPA expects to have the needed data in early to mid 2015 and will then be in a position to conduct a thorough assessment of the impacts of different emission test fuels on Tier 3/LEV III vehicles and develop any appropriate adjustments and changes, in consultation and coordination with NHTSA.”).

\textsuperscript{38} 49 U.S.C. § 32904(c) (emphasis added).

\textsuperscript{39} Response to Comments on the 2012 CAFE Rule, at 6-164.
The defects in EPA’s fuel economy formula are explained in greater detail in an appendix to these comments.\(^{40}\)

E. EPA Should Repeal and Replace Its Rule Requiring States To Use Incorrect Emissions Estimates in Pollution Reduction Planning.

EPA added a new regulatory impediment to higher ethanol usage when it published a vehicular emissions model called MOVES2014a that reports inaccurate estimates of ethanol’s emissions effects. EPA rules require States to use the new model in constructing their State Implementation Plans (SIPs) for compliance with EPA’s National Ambient Air Quality Standards (NAAQS).\(^{41}\)

The MOVES2014a model is based on an EPA-commissioned fuel study that employed a faulty “match-blending” methodology to study emissions using test fuels that are not sold, and cannot legally be sold, in the marketplace. Contrary to multiple peer-reviewed fuel studies, this analysis erroneously blames ethanol for emissions effects that were actually caused by the addition of toxic aromatic hydrocarbons to the test fuel along with ethanol.\(^{42}\) (The match-blending approach was later rejected in a peer-reviewed paper authored by Ford and GM engineers.)\(^{43}\)

The MOVES2014a model is also flawed on procedural grounds. When EPA promulgated the rule mandating the use of MOVES2014, it failed to use the notice-and-comment procedure required by the Administrative Procedure Act, even though the Agency had given advance notice and accepted public comment on past models.\(^{44}\) The States of

\(^{40}\) See Appendix D, Repealing and Replacing EPA’s Erroneous Fuel Economy Calculation.


Kansas and Nebraska challenged the MOVES2014 model on the basis of this procedural violation and the model’s substantive defects. The D.C. Circuit did not reach the merits; it concluded that the States lacked standing, because they were currently in compliance with the air quality standards and thus did not yet have to use the model.\(^\text{45}\) States will have standing if EPA finalizes nonattainment designations under the new air quality standard for ozone.

EPA is now developing the next version of the model while its MOVES Review Work Group reviews the current model. EPA has not indicated whether the new model will go through notice-and-comment rulemaking. Unless EPA changes its approach, the Agency will continue to rely on data from a flawed fuel study whose design process was, contrary to the requirements of the Executive Order, “insufficiently transparent to meet the standard of reproducibility.”\(^\text{46}\)

By requiring States to use this inaccurate model, EPA deprived States of their lawful discretion to decide whether to adopt NAAQS attainment strategies that encourage the use of ethanol in motor vehicle fuel within their borders. Instead, MOVES2014a encourages States to adopt counterproductive policies that delay NAAQS attainment by limiting the ethanol content of fuel. That not only violates basic cooperative federalism principles; it is perverse from an air quality and human health perspective. Increased levels of ethanol would reduce pollution, as demonstrated by numerous peer-reviewed studies.\(^\text{47}\)

EPA should repeal its rule requiring the States to use flawed emission factors, and EPA should repeal and replace its flawed model with emission factors that accurately predict ethanol’s effect on emissions. Until a replacement model can be developed, EPA

Boyden Gray & Associates represented the States of Kansas and Nebraska, the Energy Future Coalition, and Urban Air Initiative as petitioners challenging the model.


\(^{46}\) Request for Comment, 82 Fed. Reg. at 17,793 (noting that Executive Order 13,777 requires EPA to “evaluate regulations that rely in whole or in part on data, information, or methods that are not publicly available or that are insufficiently transparent to meet the standard of reproducibility”).

\(^{47}\) Anderson, supra note 43, at 1031 & nn.1, 13, 14, 15, 16, 17, 18, 19) (citing studies).
should lock the MOVES2014 model’s ethanol parameter at 10% to prevent spurious comparisons between fuels with different levels of ethanol content.

A more detailed explanation of the defects in the MOVES2014 emissions model is provided in an appendix to these comments, and in a Request for Correction of Information.

CONCLUSION

Ethanol is a price-competitive, safe, and efficient high-octane fuel additive, but its highest and best use is currently thwarted by counterproductive EPA rules. Each of these EPA regulatory barriers has senselessly limited competition in the market for transportation fuel, killing American jobs and depriving drivers of more economical and healthier alternatives to regular gasoline.

Repealing and replacing regulatory barriers that frustrate the market for midlevel ethanol blends would effectuate the President’s regulatory reform orders. These actions will also help EPA to comply with other Executive Orders by advancing energy independence and American agriculture.

48 See Appendix E, Repealing and Replacing EPA’s MOVES2014a Emissions Model.


Appendix A

Reforming EPA’s Alternative Certification Fuel Rules
May 15, 2017

To: Samantha K. Dravis
Regulatory Reform Officer and Associate Administrator, Office of Policy,
Environmental Protection Agency

Re: EPA Should Repeal Unnecessary Test Fuel Application Standards and Approve a Midlevel Ethanol Alternative Certification Fuel

Certification Fuel Properties Limit the Vehicles Automakers Can Build.

“Before a manufacturer may introduce a new motor vehicle into commerce, it must obtain an EPA certificate indicating compliance with the requirements of the Act and applicable regulations.” To obtain the necessary certificate, automobile manufacturers must test new vehicle models for compliance with air toxic emissions standards using a special “test fuel” (or “certification fuel”) whose properties are defined by EPA. The same procedures and test fuel are used to ensure that manufacturers meet NHTSA and EPA’s increasingly stringent fuel efficiency and greenhouse gas standards on a fleet-wide basis.

The makeup of the test fuel therefore determines the kinds of engines that car companies are able to design, build, and sell. It also determines the kinds of fuel that may lawfully be sold, because the composition of commercial fuel is governed by the Clean Air Act’s “sub-sim” law, and EPA interprets this requirement to limit the ethanol content of market fuel to the ethanol content of the test fuel.

EPA Raised the Possibility of a Midlevel Ethanol Test Fuel.

Under 40 C.F.R. § 1065.701(c), EPA may approve an auto manufacturer’s request for an alternative certification fuel.

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1 Ethyl Corp. v. EPA, 306 F.3d 1144, 1146 (D.C. Cir. 2002); see 42 U.S.C. § 7522(a)(1) (prohibiting sale of vehicles without a certificate of conformity).

2 See 42 U.S.C. § 7521 (authorizing EPA to prescribe emission standards); id. § 7525(a)(4)(A) (authorizing EPA to set and revise “test procedures” and test “fuel characteristics”).


4 42 U.S.C. § 7545(f)(1)(B). Under the plain meaning of the sub-sim law, it does not limit ethanol blending, because ethanol is a fuel a “fuel additive utilized in the certification of any . . . vehicle.” Id. But EPA recently proposed to codify its interpretation of the sub-sim law to prohibit the sale of gasoline blends with more than 15% ethanol for use in gasoline-fueled vehicles. Renewables Enhancement and Growth Support Rule, Proposed Rule, 81 Fed. Reg. 80828, 80975 (Nov. 16, 2016) (to be codified at 40 C.F.R. § 80.1564(a)(3)).

In the Tier 3 rulemaking that applied this rule to light-duty vehicles, EPA suggested that the Agency would approve an alternative certification fuel “if manufacturers were to design vehicles that required operation on a higher octane, higher ethanol content gasoline (e.g., dedicated E30 vehicles or [flexible-fuel vehicles] optimized to run on E30 or higher ethanol blends).”

EPA acknowledged that such a certification fuel with 30% ethanol “could help manufacturers who 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. This in turn could help provide a market incentive to increase ethanol use beyond E10.”

The Auto Industry Responded in Favor of a Midlevel Ethanol Test Fuel.

The auto industry responded favorably to the prospect of a new high-octane certification fuel with higher ethanol content. The Alliance of Automobile Manufacturers and the Association of Global Automakers explained that ethanol’s “in cylinder cooling effect,” along with its high octane rating, make a “mid-level gasoline-ethanol blend” particularly well suited for “improving vehicle efficiency and lowering GHG emissions,” through “increasing the engine compression ratio” and “downsizing of the engine.”

General Motors, Ford, and Mercedes-Benz each filed separate comments endorsing the concept of a higher octane, mid-blend ethanol certification fuel. Ford “strongly recommended that EPA pursue regulations . . . to facilitate the introduction of higher octane rating market fuels,” noting that they “offer the potential for the introduction of more efficient vehicles.” In light of the increasing stringency of the CAFE Rule, Ford’s recommendation

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6 Tier 3 Rule, 79 Fed. Reg. at 23528.
7 Id. at 23528-29.
8 Stephen Douglas & Julia Rege, Alliance of Automobile Manufacturers & Association of Global Automakers, Comments on Proposed Tier 3 Rule, EPA-HQ-OAR-2011-0135-4461 (July 1, 2013), at 52 (hereinafter “Auto Alliance Comments”). The trade groups noted that “[w]hile higher ethanol, higher octane fuels can be useful in all types of engines to varying degrees, they are of particular benefit to direct-injection (DI) engines,” which are becoming more prevalent because of their efficiency benefits. Id. at 53.
9 See Julian Soell & R. Thomas Brunner, Mercedes-Benz, Comments on Proposed Tier 3 Rule, EPA-HQ-OAR-2011-0135-4676 (June 28, 2013), at 3-4 (hereinafter “Mercedes Comments”); GM Comments at 14 (“support[ing] the future of higher octane and higher ethanol content in order to provide a pathway to improved vehicle efficiency and lower GHG emissions”); Cynthia Williams, Ford Motor Company, Comments on Proposed Tier 3 Rule, EPA-HQ-OAR-2011-0135-4349 (July 1, 2013), at 16 (hereinafter “Ford Comments”) (“Ford supports the development and introduction of an intermediate level blend fuel (E16-E50), with a minimum octane rating of 91 anti-knock index (AKI) that increases proportionally as ethanol is splash-blended on top of the base Tier 3 gasoline emission test fuel. The development of such a fuel would enable the first steps to the development of a new generation of highly efficient internal combustion engine vehicles. We look forward to future collaboration with the EPA on this item.”); id. at 3 (commending the idea of “maximiz[ing] vehicle efficiency in tandem with use of renewable fuels”).
10 Ford Comments, supra note 9, at 3.
was time sensitive: “Progress on this issue will be a key parameter for consideration in [EPA and NHTSA’s] . . . mid-term evaluation” of the light-duty CAFE Rule in 2017.\(^\text{11}\)

The manufacturers expressed their need for a high-octane mid-level ethanol blend test fuel as a means of improving fuel efficiency through higher compression ratios.\(^\text{12}\) The automakers explained why octane-rich ethanol’s contribution to lower carbon emissions, increased fuel efficiency, and improved driving performance makes a mid-level ethanol blend the optimal solution for automakers’ octane needs.\(^\text{13}\) Finally, they explained that selling vehicles designed for such a fuel is not only feasible—it is being done already in foreign markets.\(^\text{14}\)

**EPA’s “Readily Available Nationwide” Standard Would Have Blocked a Midlevel Ethanol Test Fuel.**

The auto industry and other groups expressed concern that a request for an alternative certification fuel rule under 40 C.F.R. § 1065.701(c) would be thwarted by that rule’s requirement that the proposed alternative certification fuel be “commercially available.”\(^\text{15}\) In

\(^{11}\) *Id.* (citing 77 Fed. Reg. 62624 (Oct. 15, 2012)).

\(^{12}\) See Ford Comments, *supra* note 9, at App’x A: Literature Review of Benefits of High Octane/High Ethanol Fuels, at 2 (“Fuel with higher octane ratings will also be increasingly important for advanced engines now being introduced that provide greater efficiency through downsizing and/or turbocharging, and that operate more often at high load where the most efficient operating conditions are limited by knock.”); Mercedes Comments, *supra* note 9, at 3–4 (“Octane is the single most important property of gasoline when determining engine design. . . . Higher octane fuels permit higher compression ratios which directly improve efficiency while downsizing engines also results in greater fuel efficiency. The optimized combination of those two actions with gasoline direct-injection provides remarkable gains in fuel economy but requires high octane market fuel—higher octane than is available today.”).

\(^{13}\) See Ford Comments, *supra* note 9, at 17 (“The higher octane number . . . for ethanol versus today’s regular gasoline . . . and higher heat of vaporization associated with gasoline-ethanol blends can improve engine efficiency through engine redesign and use of higher compression ratios. . . . [I]ncreased octane rating from increased ethanol content has the potential to allow for fuel economy, performance and emissions improvements through more efficient engine designs. Raising the minimum octane rating requirement would allow manufacturers to design engines with greater thermal efficiency through higher compression ratios and/or smaller displacement turbo-charged engines. Current engines in the fleet could also benefit from the higher octane rating through more aggressive spark timing during certain driving conditions.”); Mercedes Comments, *supra* note 9, at 4 (“This powerful fuel enjoys both reduced carbon intensity as well as the renewable aspects of ethanol. A vehicle equipped with a powertrain . . . optimized for a high-octane, mid-blend ethanol fuel . . . can simultaneously fulfill what the customer desires—performance and economy, while reducing the environmental impact.”).

\(^{14}\) See Ford Comments, *supra* note 9, at 17 (“High compression ratio engines are already found in Europe . . . . [T]he introduction of higher octane rated/intermediate level ethanol blend fuel would allow for a faster introduction of more efficient vehicle designs from Europe with lower CO\(_2\) emissions and increased efficiency . . . without the need for significant design changes.”); Mercedes Comments, *supra* note 9, at 4 (“Mercedes-Benz vehicle offerings include those with E25 capability in various global markets that could be introduced . . . to the U.S. market if regulatory and commercial conditions warrant.”).

\(^{15}\) 40 C.F.R. § 1065.701(c)(1)(ii); *see also* Energy Future Coalition & Urban Air Initiative, Comments on Proposed Tier 3 Rule, EPA-HQ-OAR-2011-0135-4353 (July 1, 2013), at 9.
the preamble to the Tier 3 Rule, EPA suggested that an alternative test fuel must be “readily available nationwide” to satisfy this requirement.16

The Energy Future Coalition and Urban Air Initiative challenged the alternative certification fuel rule in the D.C. Circuit, arguing that EPA’s “readily available nationwide” standard was arbitrary and capricious because it was impossible to meet.

**EPA Rescinded its “Readily Available Nationwide” Standard in Favor of Discretionary Consideration of Future Availability.**

In the course of the litigation, EPA conceded that it could approve an automaker’s application for alternative test fuels without requiring that the fuel be “readily available nationwide.”17 That language in the preamble was a nonbinding paraphrase of the rule itself. And EPA further conceded that the rule’s “commercial available” standard is a discretionary “factor[] EPA would consider,” rather than a “mandatory prerequisite” for approving a new test fuel.18 At oral argument, EPA conceded that the rule’s reference to “commercial availability” merely “codif[ies] the practice of the agency,” which has been to consider a new fuel’s potential to become commercially viable in the future.19 Therefore, EPA has discretion to approve an alternative certification fuel that is not yet on the market, but is likely to be commercially viable.20

Moreover, EPA said that until Model Year 2022, an automaker’s application for an alternative test fuel can be evaluated without regard to commercial availability or any other “substantive criteria.” In its brief to the Court, EPA identified 40 C.F.R. § 86.113-94(g) as an alternate mechanism for requesting and approving a new test fuel, separate from § 1065.701(c), which “need not be used by vehicle manufacturers until model year 2022.”21 Section 86.113-94(g) does not mention commercial availability or any of the other requirements of § 1065.701(c). Relying on that rule, EPA emphasized that manufacturers could get permission to use alternative test fuel “without specifying any substantive criteria.”22

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16 Tier 3 Rule, 79 Fed. Reg. at 23528.
18 Id. at 26.
20 EPA Brief at 44 (“EPA did not require strict compliance with the listed factors.”); id. (“§ 1065.701(c) identifies ‘commercial availability’ of a proposed test fuel as a factor EPA will consider, but does not require that all such listed factors be met for approval.”); see also EPA Response to Pet’n for Reh’g at 7 n.3 (“The Agency has ample discretion to consider requests on a case-by-case basis, and may evaluate trends and future market projections when considering whether to approve an alternative test fuel that is not currently on the market.”
21 EPA Brief at 11.
22 EPA Brief at 3; see also id. at 26 (“Tier 3 retained the existing alternative test fuel provision at 40 C.F.R. § 86.113-94(g), which does not specify criteria, such as commercial availability.”).
The D.C. Circuit Suggested E30 Would Be Commercially Viable if Approved.

In light of these concessions, the D.C. Circuit upheld the rule: It was “reasonable for EPA to require vehicle manufacturers to use the same fuels in emissions testing that vehicles will use out on the road.” But the Court also suggested that a midlevel ethanol fuel could meet this forward-looking standard. Based on the automakers comments in support of a new fuel, the Court found that “if EPA permitted vehicle manufacturers to use E30 as a test fuel, there is substantial reason to think that at least some vehicle manufacturers would use it.”

EPA Should Repeal its Unnecessary “Commercially Available” Standard and Approve a Midlevel Ethanol Test Fuel.

EPA should repeal its unnecessary “commercially available” fuel standard to align with the commitment the Agency has already made in court. In addition, if the auto industry accepts EPA’s invitation to apply for a midlevel ethanol certification fuel, EPA should grant that application, or unilaterally approve a new test fuel on its own initiative as the Agency has done in the past. As Ford said in its comments, a high-octane, high-ethanol certification fuel is relevant to the Midterm Evaluation of the GHG standard, because it is a key enabler of next-generation vehicle efficiency technology. EPA could encourage an auto manufacturer’s application by publicly reinforcing the interpretation it stated in litigation: immediate nationwide commercial availability is not a prerequisite for approval of an alternative certification fuel.

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23 *Energy Future Coal. v. EPA*, 793 F.3d 141, 146 (D.C. Cir. 2015).

24 *Id.*

25 *Ford Comments, supra* note 9, at 3 (citing 77 Fed. Reg. 62624 (Oct. 15, 2012)).
Appendix B

Reforming EPA’s Interpretation of the Sub-Sim Law
May 15, 2017

To: Samantha K. Dravis  
Regulatory Reform Officer and Associate Administrator, Office of Policy,  
Environmental Protection Agency

Re: EPA Should Correct its Misinterpretation of the Sub-Sim Law.

Last year, EPA proposed the Renewables Enhancement and Growth Support (REGS) Rule. If finalized, the REGS Rule would prohibit “the sale or introduction of gasoline containing greater than 15 volume percent ethanol . . . into any model year 2001 or newer . . . motor vehicle,”1 with the exception of FFVs.2 EPA implies that this policy is required by the “sub-sim” law, section 211(f) of the Clean Air Act.3 It follows that EPA “would need to approve a new [sub-sim] waiver request for E16 or other higher-level ethanol blends to be used in [non-FFV] gasoline vehicles.”4

The Proposed Rule should not be finalized, because EPA’s interpretation violates the plain meaning of the “sub-sim” statute and would impose a needless regulatory burden on ethanol producers, fuel retailers, and drivers. In addition, EPA should repeal prior interpretative rules misinterpreting section 211(f), and replace them with an interpretative rule clarifying that section 211(f) does not prohibit the sale of midlevel ethanol blends.

The REGS Rule Is Based on a Misinterpretation of the Sub-Sim Law.

In the sub-sim law, Congress made it unlawful “to first introduce into commerce, or to increase the concentration in use of, any fuel or fuel additive for use by any person in motor vehicles . . . which is not substantially similar to any fuel or fuel additive utilized” in the certification of new motor vehicles.5

EPA has historically controlled ethanol levels in gasoline by interpreting the sub-sim law to “regulate the . . . total concentration of fuel and fuel additives.”6 Thus, in 2008, EPA declared that under CAA § 211(f), “it is illegal for owners or operators of retail gasoline stations to sell

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1 Renewables Enhancement and Growth Support Rule, 81 Fed. Reg. 80828, 80975 (Nov. 16, 2016) (hereinafter Proposed Rule) (to be codified at 40 C.F.R. § 80.1564(a)(3)).
2 Id. (to be codified at 40 C.F.R. § 80.1564(a)(4)).
3 Id. at 80830.
4 Id. at 80831.
6 Proposed Rule, supra note 1, at 80877–78 (emphasis added); see Regulation of Fuels and Fuel Additives; Definition of Substantially Similar, 56 Fed. Reg. 5352, 5354 (Feb. 11, 1991); Kelsi Bracmort, Cong. Research Serv., R40445, Intermediate-Level Blends of Ethanol in Gasoline, and the Ethanol ‘Blend Wall’ 7 (2011) (“EPA has defined gasoline content (by weight), effectively limiting the concentration to roughly 7.5% (by volume).”).
gasoline blended with more than 10% ethanol for use in gasoline-only vehicles and engines.”  

And in 2011, EPA granted a sub-sim waiver allowing the use of gasoline with 15% ethanol in model year 2001 and newer vehicles. This waiver reaffirmed EPA’s view that the sub-sim law limited the allowable concentration of ethanol in gasoline. As a condition of the waiver, for example, EPA required fuel manufacturers to adopt “[r]easonable measures . . . ensuring that consumers do not misfuel” by using gasoline with more than 15% ethanol in “vehicles or engines not covered by the waiver.”

Beginning this year (2017), automakers are required to certify light-duty vehicles using a test fuel that contains 10% ethanol—in excess of the 2.7% percent oxygen cap in EPA’s obsolete definition of “substantially similar.” Even though ethanol is now undoubtedly a fuel additive used in certification, the Proposed Rule insists that E16–E83 blends “cannot legally be used in a conventional gasoline vehicle” without a waiver of the sub-sim law.

The Sub-Sim Law Does Not Limit the Concentration of Ethanol in Gasoline.

The sub-sim law prohibits increasing the concentration of fuel additives that are not substantially similar to a certification fuel, but it does not limit ethanol content. To be sure, ethanol is a “fuel additive.” But ethanol is substantially similar to a fuel additive used in the certification of new vehicles. Indeed, ethanol itself is a fuel additive used in certification: the new gasoline test fuel, for example, contains 9.6% to 10% ethanol. Whatever interpretations it may allow, the term “substantially similar” cannot reasonably be interpreted to exclude fuel additives that are identical to those used in certification. Yet that is exactly what EPA’s interpretation does by capping ethanol blending despite its use in certification fuel.

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8 Partial Grant of Clean Air Act Waiver Application Submitted by Growth Energy To Increase the Allowable Ethanol Content of Gasoline to 15 Percent, 76 Fed. Reg. 4662, 4682 (Jan. 26, 2011).
9 Id.
10 40 C.F.R. § 1065.710(b)(2).
11 Id. at 80975 (to be codified at 40 C.F.R. § 80.1564(a)(3)).
13 See 40 C.F.R. § 79.2(e) (defining additive).
14 40 C.F.R. § 1065.710(b)(2).
15 See United States v. Home Concrete & Supply, LLC, 132 S. Ct. 1836, 1846 n.1 (2012) (Scalia, J., concurring in part and concurring in the judgment) (“It does not matter whether the word ‘yellow’ is ambiguous when the agency has interpreted it to mean ‘purple’ “) (citation omitted).
The Act’s Structure Conflicts with EPA’s Interpretation of “Substantially Similar.”

EPA’s interpretation of the sub-sim law is also “inconsistent with the administrative structure that Congress enacted into law.”\(^{16}\) A “telling indication that [EPA] has misconstrued the meaning of” the sub-sim law “is the plain language of a nearby provision, section 211(c)(1).”\(^{17}\) That provision of the Act sets out the criteria that EPA is required to consider before “controlling or prohibiting the sale of fuel additives.”\(^{18}\)

Under section 211(c)(1), before controlling existing fuel additives, EPA must find that a fuel or additive (1) “causes, or contribute to, air pollution which may reasonably be anticipated to endanger the public health or welfare” or (2) causes “emissions products” that “impair to a significant degree the performance of any emission control device or system which is [or would soon be] in general use.”\(^{19}\)

Recognizing that regulatory controls on existing fuel additives can be disruptive, Congress limited EPA’s discretion in subparagraph 211(c)(2)(A) to the control of fuels and additives that “may reasonably be anticipated to endanger the public health,” and required the Agency to consider all relevant “medical and scientific evidence . . . including . . . other feasible means of achieving the emission standards” required by the Act.\(^{20}\) As the D.C. Circuit has explained, this provision requires EPA to consider whether the evidence shows that a fuel or fuel additive would “significantly increase the total human exposure” to pollution “so as to cause a significant risk of harm to human health.”\(^{21}\) EPA has no “power to act on hunches and wild guesses.”\(^{22}\)

In an adjacent provision, subparagraph 211(c)(2)(B), Congress similarly limited EPA’s discretion to prevent damage to vehicle emissions controls by requiring the Agency to consider “scientific and economic data, including a cost benefit analysis comparing” feasible regulatory alternatives, and to hold “public hearing[s] and publish findings” upon request.\(^{23}\) Together, these requirements “establish[] a rebuttable presumption that the Agency should maintain a


\(^{17}\) Ethyl Corp. v. EPA, 51 F.3d 1053, 1061 (D.C. Cir. 1995) (citing 42 U.S.C. 7545(c)).

\(^{18}\) Id.

\(^{19}\) 42 U.S.C. § 7545(c)(1).

\(^{20}\) Id. § 7545(c)(2)(A).

\(^{21}\) Ethyl Corp. v. EPA, 541 F.2d 1, 32 (1976).

\(^{22}\) Ethyl Corp., 541 F.2d at 28. A determination of significant risk requires an examination of the “probability and severity” of the risk being regulated. Id. at 18.

laissez faire posture with regard to fuel regulation.”\textsuperscript{24} EPA must show “why regulation, as opposed to no regulation, is necessary or otherwise advisable.”\textsuperscript{25}

Considered together, the detailed provisions of section 211(c) “demonstrate[] that Congress crafted a very definite scheme in which [EPA] was to consider certain criteria before . . . . prohibiting or controlling the manufacture or sale of fuel additives.”\textsuperscript{26}

The D.C. Circuit has rejected EPA’s prior attempt to circumvent this “very definite scheme.”\textsuperscript{27} In \textit{Ethyl Corp. v. EPA}, the Court rejected EPA’s attempt to deny a sub-sim waiver for a fuel additive under 211(f)(4) because of “concern about the effects on public health that could result if EPA were to” grant such a waiver.\textsuperscript{28} In rejecting EPA’s claim that it could use section 211(f) to regulate fuels “in the public interest,” the Court observed that the detailed scheme of regulation established by section 211(c) demonstrated that “Congress did not delegate to the Agency the authority to consider other factors ‘in the public interest’ such as public health when acting under section 211(f)(4).”\textsuperscript{29}

As in \textit{Ethyl}, the Proposed Rule’s reliance on section 211(f) to regulate the concentration of ethanol in gasoline under a standard of its own making “operates in complete defiance of the plain terms of the statutory criterion and with no explanation whatsoever for the application of a different standard.”\textsuperscript{30} If EPA wishes to control the concentration of ethanol in gasoline, it “may initiate proceedings under section 211(c)(1).”\textsuperscript{31}

\textbf{The Proposed REGS Rule Would Shift EPA’s Burden to Fuel Manufacturers.}

The implications of EPA’s subversion of the Clean Air Act’s fuel regulation scheme are significant. Under section 211(c), it is EPA who bears the burden of finding that a fuel additive will “cause[], or contribute[], to air pollution” that will either “impair . . . any emission control device” or “endanger the public health or welfare.”\textsuperscript{32} By misconstruing section 211(f) to control fuel additive concentration, EPA unlawfully shifts its burden to fuel manufacturers who, to get a sub-sim waiver, must “establish” that the requested concentration “will not cause or contribute to a failure of any emission control device.”\textsuperscript{33}

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{24} \textit{Amoco Oil Co. v. EPA}, 501 F.2d 722, 736 (D.C. Cir. 1974).
\item \textsuperscript{25} \textit{Id.}
\item \textsuperscript{26} \textit{Ethyl Corp.}, 51 F.3d at 1061.
\item \textsuperscript{27} \textit{Ethyl Corp.}, 51 F.3d at 1061.
\item \textsuperscript{28} \textit{Id.} at 1057.
\item \textsuperscript{29} \textit{Id.} at 1061.
\item \textsuperscript{30} \textit{Id.} at 1063.
\item \textsuperscript{31} \textit{Id.} at 1064.
\item \textsuperscript{32} 42 U.S.C. § 7545(c)(1).
\item \textsuperscript{33} \textit{Id.} § 7545(f)(4).
\end{itemize}
\end{footnotesize}
EPA should correct its interpretation and recognize that the sub-sim law does not limit the concentration of ethanol in gasoline. This would remove an unnecessary regulatory barrier to the penetration of higher ethanol blends, and it would preserve EPA’s authority to promulgate any appropriate fuel controls under section 211(c).
Appendix C

Reforming EPA’s Limit on Ethanol’s One-Pound RVP Waiver
To: Samantha K. Dravis  
Regulatory Reform Officer and Associate Administrator, Office of Policy,  
Environmental Protection Agency

Re: EPA’s Arbitrary RVP Regulation Limits the Viability of Midlevel Ethanol Blends

Although E15 was granted a waiver under EPA’s interpretation of the sub-sim law,1 President Obama’s EPA arbitrarily limited the times of year in which it may be used, artificially suppressing the market for E15. The result is that most drivers today have no access to E15, even though, for several years, E15 has been approved for use in Model Year 2001 and newer vehicles.2

To control fuel volatility, the Clean Air Act prohibits the sale of “gasoline with a Reid Vapor Pressure of 9 pounds per square inch (psi).”3 But recognizing that this standard would impose a burden on gasoline containing 10% ethanol or more, Congress allowed a 1 psi waiver “[f]or fuel blends containing gasoline and 10 percent denatured anhydrous ethanol.”4

The Obama EPA interpreted that waiver provision to exclude blends with more than 10% ethanol, insisting that “a 1 psi RVP waiver was granted by Congress in 1990 to gasoline-ethanol blends of a least 9 volume percent and no greater than 10 volume percent ethanol.”5 But Congress did not limit the waiver to E10 fuels. Congress granted the 1 psi RVP waiver to “fuel blends containing gasoline and 10 percent denatured anhydrous ethanol.”6 And E15 fuel blends contain gasoline and 10 percent denatured anhydrous ethanol.

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2 Id. at 4682.
5 REGS Rule, 81 Fed. Reg. at 80851 n.95 (emphasis added); E15 Partial Waiver, 76 Fed. Reg. at 4675. EPA currently restricts the 1 psi waiver exemption to fuels with an ethanol content of “at least 9% and no more than 10% (by volume) of the gasoline.” 40 C.F.R. § 80.27(d)(2). EPA did not limit the 1 psi waiver to E10 until 2002, more than a decade after the statute was enacted. See Regulation of Fuel and Fuel Additives: Reformulated Gasoline Transition, 67 Fed. Reg. 8729, 8736 (Feb. 26, 2002).
The Obama EPA’s needlessly restrictive interpretation of the waiver provision is “unmoored from the purposes and concerns” of the Clean Air Act.\(^7\) As shown in Figure 1 and acknowledged by EPA, “the addition of ethanol to gasoline” above 10% ethanol “decreases blend volatility.”\(^8\) By restricting the 1 psi waiver to gasoline with no more than 10% ethanol, EPA’s interpretation discourages the sale of a fuel with a lower volatility, undermining the objectives the RVP control program and increasing pollution.\(^9\)

EPA’s needless interpretation also has serious deleterious consequences for small business owners. Every summer (the period of greatest gasoline demand) nearly a thousand retailers must stop selling E15 due to EPA’s interpretation.\(^10\) Small business owners have repeatedly testified before EPA about the real world burdens imposed by this interpretation. As the owner of convenience store in Nevada, Iowa, recently explained:

“The only problem I have with the E15 comes every June 1st. On that day, I need to restrict the sales of E15 to flex fuel vehicles only. And on that day, I begin trying to explain to my customers the complex regulations that make the fuel that they buy one day off limits the next day. They are frustrated and I am frustrated. And let me tell you, when summer driving season starts, my E15 sales drop like a rock.”\(^11\)

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\(^8\) REGS Rule, 81 Fed. Reg. at 80851.


\(^11\) *Id.* at 28:15–22, 29:16.
Instead of acting on the pleas of small business owners, EPA officials in the Obama Administration repeatedly stated that this is “a difficult thing for us to sort through and work through.” But an interpretation that is not required by statute, produces no discernible environmental benefit, and harms small business owners should not be that difficult to sort out.

EPA should revoke its interpretation of the 1 psi RVP waiver provision and affirm that the statutory waiver extends to all gasoline containing at least 10% ethanol.

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12 Id. at 32:2–3.
Appendix D

Reforming EPA’s Erroneous Fuel Economy Calculation
To: Samantha K. Dravis  
Regulatory Reform Officer and Associate Administrator, Office of Policy, Environmental Protection Agency  
Re: EPA Should Correct Its Erroneous Fuel Economy Formula to Comply with the Law and Reduce Regulatory Burdens  

EPA has admitted that part of its fuel economy formula is erroneous and that it unfairly penalizes gasoline-ethanol blends, contrary to statutory requirements. This is an important consideration for automakers that face increasingly stringent fuel economy standards.

Under the Corporate Average Fuel Economy (CAFE) program, EPA calculates vehicle fuel economy in two steps.\(^1\) EPA first measures the amount of carbon in the test fuel and in the exhaust emissions.\(^2\) Then, using a complex fuel economy equation, EPA derives the fuel economy value.\(^3\)

The current fuel economy equation includes adjustments meant to control for changes in the test fuel that affect fuel economy. These adjustments implement EPA’s statutory obligation to make fuel economy testing on today’s fuel comparable to fuel economy testing in 1975 by adjusting for changes in the test fuel that affect fuel economy.\(^4\) This statutory requirement is intended to prevent EPA from changing the stringency of the CAFE standards through surreptitious changes in the test fuel, thereby ensuring that substantive changes in the CAFE standards happen in an accountable and transparent way.\(^5\) EPA’s current fuel economy equation fails to accurately adjust for changes in the test fuel, as required by law.

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\(^1\) Aron Butler et al., Analysis of the Effects of Changing Fuel Properties on the EPA Fuel Economy Equation and R-Factor, at 1, Memorandum to the Tier 3 Docket, EPA-HQ-OAR-2011-0135 (Feb. 28, 2013).

\(^2\) 40 C.F.R. § 600.113-12(f)(1).

\(^3\) Id. § 600.113-12(h)(1) \(((5174 \times 10^4 \times \text{CWF} \times \text{SG})/\sqrt{((\text{CWF} \times \text{HC}) + (0.429 \times \text{CO}) + (0.273 \times \text{CO}^2)) \times ((0.6 \times \text{SG} \times \text{NHV}) + 5471))}\); see also id. Pt. 600, App. II (sample fuel economy calculations).

\(^4\) 26 U.S.C. § 4064(c) (“Fuel economy . . . shall be measured in accordance with testing and calculation procedures . . . utilized by the EPA Administrator for model year 1975 . . . or procedures which yield comparable results.”); 49 U.S.C. § 32904(c) (“[T]he Administrator shall use the same procedures for passenger automobiles the Administrator used for model year 1975 . . . or procedures that give comparable results.”); see also General Motors Corp. v. Costle, Nos. 80–3271, 80–3272, & 80–3655 (6th Cir. 1982) (Mem.) (requiring EPA to initiate a rulemaking that would establish an “adjustment factor” reconciling current test procedures with previous ones).

\(^5\) Ctr. for Auto Safety v. Thomas, 847 F.2d 843, 846 (D.C. Cir.) (en banc) (Wald, C.J., concurring), \textit{reh'g granted and opinion vacated on other grounds}, 856 F.2d 1557 (D.C. Cir. 1988) (per curiam) (“By inserting the comparability requirement, Congress meant to insure that auto manufacturers be credited only with real fuel economy gains, not illusory gains generated by changes in test procedures.”).
The current fuel economy equation includes an adjustment to account for changes in the test fuel’s energy content. Such an adjustment is necessary because energy content affects fuel economy. In general, a fuel with a higher energy content increases volumetric fuel economy, whereas a fuel with a lower energy content reduces volumetric fuel economy. Thus, unless the equation accurately adjusts for changes in the energy content of the test fuel, fuel economy calculations for test fuels with a lower energy content (like the new E10 gasoline certification fuel) would reflect illusory losses in fuel economy.

EPA’s current fuel economy equation creates such an illusion. The source of this error is a sensitivity measure known as the R-factor. The R-factor is a measure of “how vehicles respond to changes in the energy content of the fuel.” The current R-factor of 0.6, for example, implies that a 10% change in the test fuel’s energy content causes only a 6% change in vehicle fuel economy.

The current R-factor is based on outdated vehicle data from the 1980s. Many studies since then have shown that a higher R-factor is required to accurately measure changes in fuel economy. EPA itself has acknowledged that the current R-factor is wrong and suggested a corrected value might lie “between 0.8 and 0.9.” The auto industry has asked EPA to adopt an R-factor of 1.0.

EPA has repeatedly promised to fix the R-factor, but it has never done so. In 2012, EPA assured automakers that it would fix the R-factor “in a timely manner” when it changed the test fuel. In 2014, EPA updated its test fuel to reflect in-use gasoline with 10 percent

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6 Proposed Tier 3 Rule, 78 Fed. Reg. at 29913 (“[T]he existing fuel economy equation for gasoline . . . contains an adjustment for the energy content of the test fuel to calculate fuel economy equivalent to what would have been determined using the 1975 baseline test fuel.”).

7 See id. (“Because ethanol has a lower energy content than gasoline, i.e., fewer British thermal units (Btus) or joules per gallon, and fuel economy is defined in terms of miles per gallon of fuel, it is almost certain that the same vehicle tested on a test fuel with 15 percent ethanol content will yield a lower fuel economy value relative to the value if it were tested on the current test fuel with zero ethanol content.”).

8 Tier 3 Rule, 79 Fed. Reg. at 23531.

9 Id. (stating that the R-factor’s “value is presently set at 0.6”); Proposed Tier 3 Rule, 78 Fed. Reg. at 29913 (stating that the R-factor “account[s] for the fact that the change in fuel economy is not directly proportional to the change in energy content of the test fuel.”).

10 Butler et al., supra note 1, at 3 (citing 1985 studies).

11 Id. at 3.

12 Id. at 4–5.

13 Tier 3 Rule, 79 Fed. Reg. at 23531 (“[T]he manufacturers commented that . . . EPA should finalize an appropriate test procedure adjustment in the Tier 3 rulemaking, including adoption of an ‘R’ factor of 1.0.”).

14 2012 CAFE/GHG Rule, 77 Fed. Reg. at 62777–78 (“If the certification test fuel is changed to include ethanol through a future rulemaking, EPA would be required under EPCA to address the need for a test procedure adjustment to preserve the level of stringency of the CAFE standards. EPA is committed to doing so in
ethanol, but it refused to change the R-factor. Instead, EPA kicked the can down the road, requiring automakers to use the outdated test fuel for fuel economy testing until at least 2020.

EPA should finalize an R-factor of 1. This would allow automakers to use the new test fuel for CAFE compliance purposes without being unfairly penalized for using a test fuel with a lower energy content.

More fundamentally, the current fuel economy formula fails to account for the reduction in petroleum consumption that is achieved by the ethanol portion of gasoline. Under the Energy Independence and Security Act of 2007 (EISA), EPA has authority to promote energy independence by “decid[ing] on the quantity of other fuel that is equivalent to one gallon of gasoline.”

EPA has used this discretion to credit alternative fuels with the potential to reduce petroleum consumption. EPA currently applies a “petroleum equivalency factor” to adjust the fuel economy of alternative fuel vehicles, including electric and flex-fuel vehicles. For flex-fuel vehicles, EPA applies a petroleum equivalency factor of 0.15 (a rough measure of the amount of gasoline present in E85).

a timely manner to ensure that any change in certification fuel will not affect the stringency of future GHG emission standards.”).

15 40 C.F.R. § 86.113-15; 40 C.F.R. § 1065.710.
16 Tier 3 Rule, 79 Fed. Reg. at 23531 (“While there has been some data evaluated to assess the impact of changing the emission test fuel on the ‘R’ factor, EPA did not propose a value in the NPRM and specifically stated that we would continue to investigate this issue and if necessary address it as part of a future action, as opposed to changing it in the Tier 3 final rule.”); id. at 23532 (stating that current studies “will provide data need to assess the ‘R’ value” and stating that “EPA expects to have the needed data in early to mid 2015 and will then be in a position to conduct a thorough assessment of the impacts of different emission test fuels on Tier 3/LEV III vehicles and develop any appropriate adjustments and changes, in consultation and coordination with NHTSA.”).
17 40 C.F.R. § 600.117(a).
19 49 U.S.C. § 32904(c).
20 Response to Comments on the 2012 CAFE Rule, at 6-164.
21 10 C.F.R. § 474.3 (electric vehicles); 40 C.F.R. § 600.510-12(v) (alcohol duel-fueled vehicles).
22 49 U.S.C. § 32905(a)–(b).
Under this authority, EPA should determine that 1.11 gallons of E10 “is equivalent to one gallon of gasoline” (because E10 actually contains 90% gasoline). EPA could also catalyze the development of vehicles dedicated to operate on high-octane, midlevel ethanol blends by extending a comparable petroleum equivalency factor for vehicles designed to operate on such blends. For example, if in the future manufacturers can certify vehicles on an alternative certification fuel containing 25% ethanol, EPA could decide that 1.33 gallons of E25 “is equivalent to one gallon of gasoline” (because E25 contains only 75% gasoline). This would be consistent with EISA and with the Administration’s goal of promoting energy independence and reducing regulatory burdens.

23 To illustrate, a vehicle that receives a fuel economy rating of 25 mpg on the E10 test fuel would receive a fuel economy rating of 27.8 mpg after the petroleum equivalency factor is taken into account (25/0.90 = 27.8).

24 To illustrate, a dedicated vehicle that receives a fuel economy rating of 25 mpg on the E25 test fuel would receive a fuel economy rating of 33.3 mpg after the petroleum equivalency factor is taken into account (25/0.75 = 33.3).

Appendix E

Reforming EPA’s MOVES2014a Emissions Model
May 15, 2017

To: Samantha K. Dravis
Regulatory Reform Officer and Associate Administrator, Office of Policy,
Environmental Protection Agency

Re: EPA Should Correct the MOVES2014 Model’s Anti-Ethanol Bias

The MOVES model, developed by EPA’s Office of Transportation and Air Quality (OTAQ), estimates emissions for mobile sources at the national, county, and project level for criteria pollutants, greenhouse gases, and air toxics. MOVES2014 is the latest major revision of EPA’s vehicular emissions model. It is profoundly biased against ethanol and it must be repealed and replaced with a corrected model.

EPA Imposed MOVES2014 on the States without Notice in Violation of the APA.

EPA imposed the MOVES2014 model on the States in a binding rule without notice and an opportunity for comment as required by the Administrative Procedure Act. ¹ States were required to immediately begin using MOVES2014 in developing their State Implementation Plans (SIPs) for compliance with the National Ambient Air Quality Standards (NAAQS). Until it issued MOVES2014, EPA had promulgated all major revisions of its vehicular emissions model following notice and comment.

The States of Kansas and Nebraska challenged EPA’s release of MOVES2014 in the D.C. Circuit, but they did not have standing because they were not yet in nonattainment with a NAAQS.² States will have standing to challenge MOVES2014 if EPA finalizes nonattainment designations under the new air quality standard for ozone.

In addition to the procedural deficiencies of EPA’s promulgation of MOVES2014, the model is substantively flawed.

The MOVES2014 Model’s Tailpipe Emissions Factors Are Flawed.

MOVES2014’s tailpipe emissions factors are derived from the results of the “EPAct study,” an ambitious but misguided analysis of the emissions effects of five fuel parameters (ethanol content, aromatics content, Reid Vapor Pressure (RVP), T50, and T90) based on 15 vehicles and 27 test fuels including so-called straight gasoline (E0) and blends of gasoline with 10%, 15%, and 20% ethanol (E10, E15, and E20).

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EPA conducted the EPAct study with the assistance of Southwest Research Institute (SwRI) and the Coordinating Research Council (CRC), a non-profit organization supported by the American Petroleum Institute, and petroleum industry employees. Contrary to EPA’s own requirements of “objectivity” and “unbiased” information, EPA did not solicit input from biofuel producers or other affected entities outside the oil industry.

EPA could have modeled ethanol’s emissions effects by simply adding ethanol to commercial gasoline blendstocks (“splash blending”), or mimicking real-world refinery practices. Instead, the EPAct study’s designers created novel fuels through an arbitrary “match blending” process in which they first adjusted the gasoline blendstock to hold constant selected parameters, including T50 and T90—the “distillation temperatures” at which 50% and 90% of the contents of the fuel are vaporized—even though refineries operate under no such constraints. To match the T50 and T90 of fuels with varying ethanol concentrations, high distillate aromatic and saturated hydrocarbons were added to fuels with higher ethanol content to counteract ethanol’s beneficial effect of lowering T50 and T90.

But there is no good reason in science, engineering, or law to hold T50 and T90 constant when testing different levels of ethanol. Any semblance of uniformity among the test fuels is illusory, for the distillation profiles of blended fuels are not straight lines. The resulting test fuels deviated significantly from one another and from fuels available in the market—with some test fuels, for example, exceeding legal limits on driveability (a measure of cold-start and warm-up performance) and others containing unrealistically high octane ratings, thanks to the addition of costly and harmful high-distillate hydrocarbons.

The result of this “match blending” was the EPAct study’s conclusion that “other factors being equal, increasing ethanol is associated with an increase in emissions.” This conclusion is misleading at best, because other factors are never equal in the real world.

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4 Affiliated oil companies include BP, Chevron, ExxonMobil, Aramco, Marathon Petroleum, and Shell. See CRC, CRC Organizational Overview 5 (June 22, 2015), http://bit.ly/1T2nlfD.


6 Id. at 7.

7 See Anderson et al., Issues with T50 and T90 as Match Criteria for Ethanol-Gasoline Blends, 7 SAE Int’l J. Fuels & Lubr. 1027, 1034 (2014) (“[O]ther factors are not equal when ethanol is added to gasoline. Depending on the blendstock, the added ethanol reduces T50 due to near-azeotropic behavior and reduces T90 and aromatics content by dilution. Considered as a whole, these factors tend to reduce emissions with increasing ethanol.”).
test fuels for the purpose of measuring ethanol’s effect on tailpipe emissions. And that is the only way to account for the EPAct study’s results: ethanol has been shown in numerous empirical studies to decrease emissions.

Even when one accounts for the other four fuel parameters (aromatics, T50, T90, and RVP), it is impossible to derive accurate results from the EPAct study. The study fails to control for differences in the full range the test fuels' distillation temperatures (other than T50 and T90). Because of ethanol’s non-linear effect on gasoline distillation, raising the T50 of higher ethanol blends to match the T50 of E0 and E10 blends results in elevated T60-80 distillation temperatures. This skewed the results of the higher ethanol fuels, because those high upper distillation temperatures impede complete combustion, producing pollution. And whenever more heat is required to vaporize fuel components, more emissions result. The EPAct study also fails to account for differences in the speciation of the test fuels’ hydrocarbon content. The high-distillate hydrocarbons used to raise T50 and T90 have the greatest effect on emissions, but for purposes of its match blending methodology, the EPAct study treats all aromatics alike. EPA’s neglect of these confounding variables undermines the integrity of the results.

The MOVES2014 Models’ Evaporative Emissions Factors are Flawed.

MOVES2014 includes inaccurate evaporative emissions factors based on four flawed oil-funded studies. The model’s “fuel adjustment” for ethanol predicts that blending any amount of ethanol into gasoline (E5 through E85) more than doubles permeation emissions—a subset of evaporative emissions that contribute significantly to the total modeled emissions of VOCs. Specifically, the model predicts that ethanol raises permeation rates 113.8% in models year 2001 and newer vehicles, and 107.3% for model years 1997 to 2000.

EPA developed this fuel adjustment factor for ethanol using data from four CRC studies funded by the oil industry. All four studies are systematically biased against ethanol because

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8 Id. at 1030 (“[Blendstock] modifications should generally not be needed to control these parameters in studies evaluating the effects of ethanol content on emissions if starting with an E10 fuel or using an E10 intended blendstock.”).

9 EPA, Evaporative Emissions from On-road Vehicles in MOVES2014, EPA-420-R-14-014, at 13 (Sept. 2014). “Permeation emissions are specific hydrocarbon compounds that escape through micro-pores in pipes, fittings, fuel tanks, and other vehicle components (typically made of plastic or rubber).” Id. at 15.


they include ethanol test fuels with artificially elevated volumes of aromatics and other fuel components that contribute to permeation emissions. In particular, the ethanol test fuels in CRC studies E-65-3, E-77-2, and E-77-2b consistently have higher volumes of aromatics and a significantly higher BTEX content than non-ethanol fuels, contrary to market trends. This introduces a significant systematic bias against ethanol in these studies, because “permeation increases exponentially with fuel aromatic content” and BTEX in particular.

The four CRC studies are also biased against ethanol for the related reason that they fail to control for confounding variables. With the occasional exception of RVP, the CRC studies focus systematically on the effect of a single factor (ethanol), without adequately testing other fuel properties (or interactions of multiple properties) that are known to increase permeation emissions. For instance, highly volatile aromatics, like benzene, and smaller molecular-size paraffins, like pentane, can contribute significantly to permeation. Because the CRC studies focus on ethanol without controlling for other significant factors and aberrant vehicle data, the CRC studies confound the effect of ethanol content with the effects of other fuel or vehicle properties.

And, as CRC itself has reported, EPA’s ethanol fuel adjustment factor is not even consistent with the studies’ results. CRC itself recently concluded that MOVES2014 “significantly over-estimate[s] permeation” from model year 2004 and newer vehicles, in part because the same CRC studies EPA relied on show that newer vehicles are “less sensitive to the increase in permeation due to ethanol” than EPA assumed.

The MOVES2014 Model’s Default Fuel Parameters Are Inconsistent with Market Fuel.

Even if the model itself were accurate, it would produce inaccurate results because of the models' mandatory inputs. States are at the mercy of MOVES2014’s default fuel parameters.

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15 Reddy, supra note 13, at 5.
16 Sierra Research, Review of EPA’s MOVES2014 Model, CRC Project No. E-101, at 34 (Aug. 11, 2016) (hereinafter CRC E-101). CRC found that the MOVES2014 permeation rates “omit key recent test data and significantly over-estimate permeation from Tier 2 certified vehicles (i.e., near-zero standards),” id. at 32; see id. at 34 (“Both the base [permeation] rate and the ethanol increment are less, and the net impact would be significantly reduced permeation emissions from the current fleet commencing with the model 2004 year.”).
17 Id. at 32.
18 EPA’s guidance allows substitution of the State’s own parameters only “where precise local volumetric fuel property information is available.” EPA, MOVES2014 and MOVES2014a Technical Guidance: Using
But the defaults are inconsistent with known data about the fuel actually sold throughout the country. As Department of Transportation scientists concluded, the default fuel parameters “likely do not have the same attributes” as real-world fuels.19

**EPA Should Correct the MOVES2014 Model.**

Because the EPAct study and MOVES2014 model fall short of EPA’s information quality standards, the States of Kansas and Nebraska, the Energy Future Coalition, and Urban Air Initiative jointly filed a Request for Correction of Information under EPA's Information Quality Guidelines.20 EPA has committed to respond by May 25, 2017.

EPA should withdraw the EPAct study and lock the MOVES2014 model’s ethanol variable at 10% to prevent false comparisons between fuels with different levels of ethanol.

EPA should then develop a replacement model with corrected emissions factors based on an objective, accurate, and unbiased fuel effects study, following a meaningful opportunity for public comment. This could occur in conjunction with the “FACA MOVES Review Work Group” that EPA established in 2016 to evaluate MOVES2014 and provide advice to EPA as it produces a new emissions model as early as 2018.21

Urban Air Initiative has requested an opportunity to present the substance of its Request for Correction to the Work Group, but EPA has not yet responded to that request.