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Steven Cliff
Acting Administrator
National Highway Traffic Safety Administration (NHTSA)
1200 New Jersey Avenue, SE
Washington, DC 20590
Submitted via: www.regulations.gov

RE: Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks (Docket No. NHTSA-2021-0053)

Comments are hereby submitted on the NHTSA notice of proposed rulemaking, *Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks*, published in the Federal Register on September 3, 2021 (86 Fed. Reg. 49,602) (hereafter the "NPRM").

Dear Dr. Cliff:

Growth Energy is the world's largest association of biofuel producers representing 92 biorefineries that produce nearly 9 billion gallons of low-carbon renewable fuel annually and 91 businesses associated with the biofuel production process. Together, we remain committed to helping our country diversify its energy portfolio to create more clean energy jobs, further decarbonize our nation's energy mix, sustain family farms, and drive down the costs of transportation fuel for consumers.

We appreciate NHTSA's work to reshape the nation's transportation mix to make it more fuel-efficient and sustainable, as this is a central focus for our industry as well. Ethanol is the most available and affordable means to achieve key CAFE goals, including enabling next-generation fuel-efficient vehicles (with the clean octane ethanol provides), improving energy security, reducing emissions of greenhouse gases and toxic air pollutants, and promoting environmental justice. The NPRM's technical analysis confirms ethanol's widespread use, finding "Most of the gasoline sold in the United States contains up to 10 percent ethanol (E10)" and virtually all vehicles on the road today (those made in model year 2001 and later) are approved to use E15.¹ Additionally, flex-fuel vehicles (FFVs) that run on up to 85% ethanol can

¹ See NHTSA, *Draft Supplemental Environmental Impact Statement* (August 2021) ("SEIS"), p. 6-34, available in this Docket No. NHTSA-2021-0054.

offer immediate and significant benefits regarding key CAFE goals of energy security, greenhouse gas emissions reductions, reduced toxic air pollution, and environmental justice .

With a stable policy and access to drivers, our industry can deliver low-carbon, low-cost, high-performing, sustainable vehicle fuel solutions that reduce greenhouse gas emissions now and well into the future.

The .15 volumetric conversion factor must not be eliminated as it reflects statutory intent and incentivizes manufacturing FFVs that significantly benefit achieving CAFE rule goals.

The NPRM “seeks comment on whether to retain non-statutory flexibilities.” (NPRM at 49,609). Included here are a long list of incentives, including a .15 factor that is used to incentivize manufacturing FFVs to reduce petroleum consumption and promote energy security and other CAFE-related benefits. (NPRM at 49,610). Other sources refer to this .15 as a volumetric conversion factor (VCF).² The NPRM notes, without further extended discussion, “NHTSA will continue to incorporate the 0.15 incentive factor.” (NPRM at 49,610 and again at 49,816). It is imperative NHTSA retain the use of this .15 VCF in order to respect statutory intent, achieve key CAFE energy security and environmental goals, promote environmental justice, and ensure the success of the CAFE program. Furthermore, since the NPRM does not discuss or take comment on removing this .15 factor, nor provide any analytical basis for removing it, any other NHTSA action on this VCF other than simply retaining this .15 factor would be inappropriate. In addition to NHTSA not providing any reasoned basis for removing it, automakers and fuel producers have relied on this .15 factor remaining in place, and thousands of fuel retailers have made investments in anticipation of fueling FFVs incentivized by this VCF.

By way of additional background, the current CAFE regulations contain the VCF of .15 at 40 CFR 600.510-12(c)(2)(v). This VCF of .15 is derived from the statutory provisions at 49 U.S.C. 32905(a). FFV fuel (“E85”) nominally contains up to 85% ethanol and only 15% gasoline, parallel to the .15 factor.³ Under current regulations, the .15 VCF is used to increase the fuel economy compliance value of FFVs, to reflect the CAFE program’s goal to reduce petroleum consumption and promote renewable fuel and other program goals.

This VCF is based on statutory incentive provisions and must not be altered.

The NPRM notes that in a 2012 CAFE final rule, “NHTSA and EPA concluded that it would be inappropriate and contrary to the intent of EPCA/EISA to measure dual-fueled vehicles’ fuel economy like that of conventional gasoline vehicles with no recognition of their

² See Letter of Byron J. Bunker, Director of Compliance Division, Office of Transportation and Air Quality, U.S. EPA, “E85 Flexible Fuel Vehicle Weighting Factor for Model Year 2016-2018 Vehicles,” (November 12, 2014) (CD-14-18 (LDV/LDT/ICI/LIMO)) (“2014 F Factor Guidance”), p.6, at https://iaspub.epa.gov/otaqpub/display_file.jsp?docid=33581&flag=1. This document notes there that “use of the 0.15 volumetric conversion factor” was an “established part of the CAFE program (as required by statute).”

³ See National Academy of Sciences, *Cost, Effectiveness, and Deployment of Fuel Economy Technologies for Light-Duty Vehicles* (2015), p. 60 (stating that the .15 factor is “to reflect that E85 is considered to consist of only 15 percent petroleum-derived fuel”), available at <https://www.nap.edu/catalog/21744/cost-effectiveness-and-deployment-of-fuel-economy-technologies-for-light-duty-vehicles>.

alternative fuel capability.” (NPRM at 49,832). This reasoning is absolutely correct. Eliminating the VCF for dual-fueled vehicles (i.e., FFVs) would create an arbitrary and capricious distinction between 100% biofuel dedicated vehicles (which are not commercialized in the U.S.) and an FFV designed to run on nominal 85% ethanol (and can run on 100% biofuel). Congress clearly intended to incentive FFVs “capable of operating” on at least 85 percent ethanol.⁴ NHTSA regulations apply the VCF to that percent of FFV fuel use projected to be met with E85 versus gasoline over the future lifetime of FFVs.⁵ So the VCF’s use is based on real-world use of biofuels and the important energy security and environmental benefits of those biofuels.

The VCF is imperative to incentivizing the manufacturing of FFVs that can achieve key CAFE program goals, including energy security and reducing vehicle emissions.

In considering CAFE standards, NHTSA must consider “the need of the United States to conserve energy,” which includes assessing the energy security and environmental benefits of reducing petroleum use. (See 49 U.S.C. 32902(f) and the NPRM at 49,787).⁶ FFVs provide significant energy security and environmental benefits. Key to achieving these energy security and environmental goals, FFVs are designed to run on 85% renewable fuel and now can run on 100% renewable fuel when renewable feedstocks - like renewable naphtha - eliminate the last petroleum fuel components in E85. Using home-grown renewable fuel, FFVs allow near total replacement of petroleum products, with attendant energy security and environmental benefits.

Energy security is a key NPRM consideration. The NPRM recognizes it must give “serious consideration of the energy security risks of continuing to consume oil.” (NPRM at 49,604). FFVs are an extremely cost-effective means to immediately replace up to and beyond 85% of petroleum use in automobiles. According to data from HIS Markit, over 22 million FFVs are on the road today.⁷ And more FFVs can be cost-effectively manufactured. For instance, FFVs scaled up to almost 20% of all 2014 light-duty vehicles.⁸ Moreover, a robust E85 retail

⁴ See 49 USC 32901(a)(1) and (2), which define the “alternative fuel” use by a “dual fueled automobile”, which definitions are incorporated by the VCF incentive in 49 USC 32905(a) and (b).

⁵ This real-world usage is reflected in the “F-Factor” that represents that percent of FFV fuel usage on E85 projected over the life of the FFV. See the reference to the F factor, along-side the 0.15 VCF, in the NPRM at 49,610 and again at 49,816. See also, the 2014 F Factor Guidance, *supra*, p.1, including its focus on “the real-world use of E85 with a weighting factor ... described as “F” in the regulations.”

⁶ Later NHTSA explains “NHTSA is interpreting the need to conserve energy to be largely driven by fuel savings, energy security, and environmental concerns.” (NPRM at 49,810).

⁷ See e.g., [Flex Fuel Database – Growth Energy](#)

⁸ See e.g., EPA, *Manufacturer Performance Report for the 2016 Model Year* (January 2018), p. 27, available at <https://www.regulations.gov/document?D=EPA-HQ-OAR-2018-0283-0647>. Unfortunately, EPA subsequently failed to properly administer the Renewable Fuel Standards (RFS) program, which undercut an important source of improved E85 pricing, and EPA also undercut other incentives for FFV manufacturing in the EPA’s vehicle greenhouse gas program. Now, with increasing desires by EPA to reduce greenhouse gas emissions, and the use of a real-world F factor in EPA and CAFE regulations reflecting E85 use, FFVs are primed to be an important compliance option based on real-world greenhouse gas emission reductions and other environmental and energy security benefits. In separate comments to EPA on its vehicle GHG program, Growth Energy has strongly advocated for EPA re-instituting the VCF for FFVs, consistent with the NHTSA program and the ability of FFVs to substantially reduce lifecycle greenhouse gas emissions. See Growth Energy comments on the EPA proposed rule, *Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emission Standards*, available in Docket ID No. EPA-HQ-OAR-2021-0208.

fueling infrastructure exists with more than 5000 retail locations today and can be readily expanded.⁹

FFVs also significantly reduce greenhouse gas emissions. The NPRM's technical materials find "Ethanol used as an on-road vehicle fuel has the potential to reduce GHG emissions substantially, compared with conventional gasoline."¹⁰ Further, "when ethanol crops are grown, they capture CO₂ and offset the GHG emissions later released through fuel combustion" and the "higher the blend of ethanol in the fuel, the lower the net GHG emissions."¹¹ Recent data show today's corn ethanol reduces greenhouse gas emissions by an average of 46% compared to gasoline and can reduce emissions up to 70% with readily available technologies.¹²

Ethanol is also a clean, renewable source of high-octane and thus replaces carcinogenic and toxics petroleum-based sources of octane. Using more ethanol and ethanol-blended fuel reduces air toxics such as benzene, carbon monoxide, and harmful particulates.¹³

Notably, these environmental benefits can be obtained without any loss of fuel economy. NHTSA finds "High-octane fuel is designed to enable efficiency improvements that are sufficient to offset its lower energy density in a suitably calibrated and designed engine system, such as a flex fuel vehicle."¹⁴

FFVs also provide a pathway to the broader use of mid-level ethanol blends, which can also yield substantial environmental and fuel economy benefits. The SEIS finds high-octane fuel vehicles with "miles per gallon of gasoline-equivalent (MPGGE) gains of 5 and 10 percent" result in GHG reductions in the range of 16% to 31% using mid-level ethanol blends ranging from E25 to E40.¹⁵ Clearly, FFVs have significant environmental and energy security benefits, and the VCF must remain in place to recognize these benefits and incentivize automakers to manufacture FFVs.

A VCF for FFVs promotes significant environmental justice benefits.

The NPRM highlights the need for environmental justice. The very first paragraph of the NPRM states the CAFE rules must be "immediately reviewed for consistency with our Nation's

⁹ See e.g., [Flex Fuel Database – Growth Energy](#)

¹⁰ SEIS, *supra*, p. 6-34.

¹¹ *Id.*

¹² Scully et al, *Carbon intensity of corn ethanol in the United States: state of the Science* (2021, Environ. Res. Lett), finding corn ethanol reduces GHGs 46% versus gasoline, available at <https://iopscience.iop.org/article/10.1088/1748-9326/abde08>. For other sources showing corn ethanol greenhouse gas reductions up to 70% versus gasoline, see e.g., See e.g., Lewandrowski (USDA) et al., *The greenhouse gas benefits of corn ethanol – assessing recent evidence* (March 2019), available at <https://www.tandfonline.com/doi/full/10.1080/17597269.2018.1546488>. Further information on the greenhouse gas benefits of ethanol is found in Growth Energy comments EPA's recent proposed rule to reduce greenhouse gas emissions from vehicles, in Docket ID No. EPA-HQ-OAR-2021-0208.

¹³ University of California Riverside, *Investigating the Effect of Varying Ethanol and Aromatic Fuel Blends on Secondary Organic Aerosol (SOA) Forming Potential for a FFV-GDI Vehicle* (April 2018), available at <https://fixourfuel.com/wp-content/uploads/2018/04/UC-Riverside-Study.pdf>.

¹⁴ SEIS at 6-34.

¹⁵ SEIS at 6-35 to 6-36.

abiding commitment to empower our workers and communities” and “promote and protect our public health and the environment.” (NPRM at 49,602). Later, the NPRM “considers environmental justice issues as part of the environmental considerations under the need of the U.S. to conserve energy.” (NPRM at 49,794).

Environmental justice concerns include “areas where oil production and refining occur, areas near roadways, coastal flood-prone areas, and urban areas that are subject to the heat island effect.” (NPRM at 49,795). By replacing toxic aromatics in gasoline, providing clean octane, reducing emissions near roadways, reducing refinery output in urban areas, and reducing greenhouse gas emissions, use of higher biofuel blends in conjunction with FFVs help solve all of these environmental justice concerns.

Environmental justice is also promoted by automakers being incentivized to manufacture FFVs and thereby providing high-performing vehicles that are more affordable to lower-income consumers. Higher biofuel blends may be a primary means of reducing cost impacts of the CAFE program on low-income consumers. While other alternative fuel vehicles may be relatively expensive or require extensive infrastructure upgrades, higher biofuel blends can be utilized by nearly all consumers, at a discounted price relative to gasoline. Higher biofuel blends are a way to share the economic advantages of a low carbon transportation sector with consumers of all income levels.

FFVs and the VCF can ensure the success of the CAFE program.

Without the VCF, manufacturers will stop making FFVs, which could undermine compliance with, and the political and social acceptability of, a strong CAFE program.¹⁶ FFVs provide automakers an important compliance flexibility and can facilitate the transition to increased electrification by promoting the acceptability of stringent CAFE standards.

The NPRM appears to grossly misstate the relative production importance of FFVs. The NPRM suggests that in 2012 through 2017, more electric vehicles were produced than FFVs. (NPRM at 49,825, Table VII-6). This data is not accurate, and the NPRM’s FFV figures are severely inaccurate, stating that FFVs produced numbered only a few thousand or less in those years. The NPRM also indicates *no* light truck FFVs were produced in model years 2015 through 2017, and only 82 light truck FFVs were produced in model year 2013. By comparison, the applicable annual government compliance summary for those years finds over 1,000,000 FFVs produced in most of those years, with over 2,500,000 FFVs produced in 2014.¹⁷ In model years 2015 through 2017, FFV light truck production was not zero, but averaged around a million FFV light trucks produced per year. Rather than FFV production being 0.01% of vehicle

¹⁶ After EPA ratcheted back vehicle greenhouse gas program FFV incentives, FFV production dropped from almost 20% of all 2014 light-duty vehicles to only about 8% of 2016 vehicles. See EPA, *Manufacturer Performance Report for the 2016 Model Year*, p. 27, *supra*. As noted above, in separate comments to EPA on its vehicle GHG program, Growth Energy has strongly advocated for EPA re-instituting FFV incentives, consistent with the ability of FFVs to substantially reduce lifecycle greenhouse gas emissions. In the meantime, it is imperative that the VCF remain in place under the CAFE program, to recognize and promote the important environmental and energy security benefits of FFVs.

¹⁷ See EPA, *2020 EPA Automotive Trends Report* (January 2021), Figure 5.6, p. 85, available at <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1010U68.pdf>.

production in model year 2014 as stated in the NPRM, FFVs were almost 20% of the entire light duty vehicle fleet.¹⁸

The NPRM notes “regulatory alternatives that require extensive application of very advanced technologies ... may not be economically practicable” and thus inconsistent with the statute. (NPRM at 49,804). The NPRM models electric vehicle and plug-in hybrid electric vehicle market share to range from less than 1% to a modest 7%, respectively, from model years 2023 through 2026, and acknowledges that consumer demand for electric vehicles “remains somewhat unclear.” (NPRM at 49,805). Accordingly, “the majority of light-duty vehicles will continue to be powered by internal combustion engines in the near- to mid-term under all regulatory alternatives.” (NPRM at 49,795). For these internal combustion engines, FFVs are a proven, cost-effective technology to reduce oil use and improve environmental outcomes. Furthermore, various next generation engines, including downsized and turbo-charged engines, are particularly well suited to run on higher level ethanol blends, which provide a clean, renewable source of octane.¹⁹

Today, more than 22 million FFVs are on the road with more than 5,000 fueling locations across the country. In California alone, E85 use has more than tripled since 2014.²⁰ With a properly administered Renewable Fuel Standard (RFS) program by the EPA, FFV fueling and use of renewable biofuels can rapidly increase nationwide. With NHTSA maintaining the current VCF for FFVs in place as-is, manufacturing of FFVs can also increase while providing important CAFE program flexibility and promoting the program’s political and social acceptability.

In summary, the VCF for FFVs is statutorily derived and must not be eliminated or altered by NHTSA. Prior NHTSA reasoning dating back to 2012 on maintaining the VCF was absolutely correct, and it would be arbitrary and capricious for NHTSA to remove the regulatory incentive for dual-fueled FFVs vehicles (designed for 85% ethanol use) contravening the statutory incentive for dedicated biofuel vehicles. Furthermore, NHTSA has not provided any discussion, or reasoned basis, or even specifically requested comment, on removing or altering the .15 VCF for FFVs, so the VCF must be left in place as-is, without modification.

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The use of higher biofuel blends in conjunction with ethanol capable vehicles is a key solution to energy security, greenhouse gas emissions reductions, lower toxic air pollution, and environmental justice concerns that underpin this rulemaking. While our comment for NHTSA appropriately focuses on the VCF and FFVs, it is critical that NHTSA and the Department of Transportation work closely with EPA on a number of policy items that expand the use of higher biofuel blends. These include strong renewable volume obligations under the RFS, year-round sale of E15 in today’s vehicle fleet, expanded use of E15 and E85 in today’s vehicle fleet,

¹⁸ See EPA, *Manufacturer Performance Report for the 2016 Model Year*, *supra*.

¹⁹ See e.g., Oak Ridge National Laboratory, *Summary of High-Octane, Mid-Level Ethanol Blends Study* (July 2016), pp. 1-2, available at <https://info.ornl.gov/sites/publications/Files/Pub61169.pdf>. FFVs can immediately use these mid-level ethanol blends and provide a pathway to further optimized vehicles and engines using these renewable fuels.

²⁰ California Air Resources Board, “Annual E85 Volumes,” available at <https://ww2.arb.ca.gov/resources/documents/alternative-fuels-annual-e85-volumes>.

approval and use of a high octane, midlevel ethanol blend such as one proposed by Growth Energy nearly a decade ago, and broader incentives for continued FFV production. We have included our comments to EPA on the GHG proposal as well. Thank you in advance for your consideration.

Sincerely,



Christopher P. Bliley
Senior Vice President of Regulatory Affairs
Growth Energy

