

Alliance for Automotive Innovation

Comments to the U.S. Department of Energy

Regarding

**Petroleum Equivalency Factor
Notification of Petition for Rulemaking**

**Docket ID No.
EERE-2021-VT-0033**

February 28, 2022

Introduction

The Alliance for Automotive Innovation (Auto Innovators)¹ hereby submits comment on the U.S. Department of Energy (DOE) Notification of Petition for Rulemaking, Petroleum Equivalency Factor (the Notice)² and the petition for rulemaking described and included therein (the Petition).

As DOE is aware, the petroleum equivalency factor (PEF) is used in the calculation of fuel economy for plug-in electric vehicles (battery electric and plug-in hybrid electric vehicles) in the National Highway Traffic Safety Administration (NHTSA) Corporate Average Fuel Economy (CAFE) program.³ Auto Innovators is a trade association representing automakers, the regulated parties that will be directly impacted by any changes made to the PEF, and others. We value your careful consideration of our comments. The auto industry remains an essential and important part of the U.S. economy and manufacturing sector, supporting more than 10 million jobs, and is responsible for 5.5 percent of our nation's gross domestic product.

The U.S. auto industry is undergoing a transformation from gasoline-powered to electric-powered vehicles. According to AlixPartners, as of June 2021, the automotive industry had announced \$330 billion in investments in electric vehicles through 2025.⁴ Every week seems to bring announcements of investments in electric vehicles and related research and manufacturing. In its recent light-duty vehicle greenhouse gas (GHG) rule, the U.S. Environmental Protection Agency (EPA) projected that manufacturers will make 17% of all new vehicles sold in the U.S. plug-in electric by model year 2026.⁵ President Biden set forth a goal of 50% electric vehicle (EV) sales (including battery electric, plug-in hybrid electric, and fuel cell electric vehicles) by 2030.⁶ Auto Innovators stated, "With

¹ The Alliance for Automotive Innovation is the singular, authoritative and respected voice of the automotive industry. Focused on creating a safe and transformative path for sustainable industry growth, the Alliance for Automotive Innovation represents the manufacturers producing nearly 99 percent of cars and light trucks sold in the U.S. The organization is directly involved in regulatory and policy matters impacting the light-duty vehicle market across the country. Members include motor vehicle manufacturers, original equipment suppliers, as well as technology and other automotive-related companies. The Alliance for Automotive Innovation is headquartered in Washington, DC, with offices in Detroit, MI and Sacramento, CA. For more information, visit our website <http://www.autosinnovate.org>.

² Petroleum Equivalency Factor (Notification of Petition for Rulemaking), 86 Fed. Reg. 73992 (Dec. 29, 2021), hereinafter "Notice".

³ 49 U.S.C. § 32904(a)(2)(B).

⁴ AlixPartners, "Automakers and Suppliers Need to Adopt 'All-New Ways of Doing Business' to Master the Conversion to Electric Vehicles, Materials Shortages, the Rise of New Entrants and Other Disruptors Such As Autonomy and Connectivity, Says Alix Partners Analysis" (Jun. 17, 2021), <https://www.alixpartners.com/media-center/press-releases/2021-alixpartners-global-automotive-outlook/> (accessed Jan. 31, 2022).

⁵ Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards (Final Rule), 86 Fed. Reg. 74434, 74485 (Dec. 30, 2021).

⁶ Executive Order 14037, "Strengthening American Leadership in Clean Cars and Trucks" (Aug. 5, 2021).

the right complementary policies in place, the auto industry is poised to accept the challenge of driving EV purchases to between 40 and 50 percent of new vehicle sales by the end of the decade.”⁷

Although automakers, federal and state governments, and other stakeholders have lofty goals for EVs, challenges remain. Through September 2021, the 2021 U.S. market share for EVs was only 4.2%.⁸ Meeting EPA projections for MY 2026 will require a fourfold increase in market share and reaching 50% by 2030 will require a twelvefold increase. Electric vehicles also remain expensive to manufacture and purchase relative to internal combustion engine vehicles. From a total cost of ownership perspective, a 300-mile range battery electric small sport-utility vehicle is expected to remain more expensive than a similar turbocharged internal combustion engine vehicle until approximately 2030.⁹ Electric charging infrastructure is also recognized as critical need for a growing EV market. The International Council on Clean Transportation estimates, “To support electric vehicle growth through 2030, public and workplace chargers will need to increase 27% annually, which is less than the rate of charger growth between 2017 and 2020, but requires adding an average of over 200,000 chargers each year by 2026.”¹⁰

The Petition discusses several aspects of the current PEF, including an assertion that DOE should reconsider its inclusion of the “Fuel Content Factor” as outside of the scope of its statutory considerations.¹¹ Modification of the Fuel Content Factor would have far-reaching implications for CAFE rulemaking and compliance, regulatory harmonization, and for the development of the nascent U.S. electric vehicle market. DOE should take these factors into careful consideration in determining whether and how to conduct a PEF rulemaking in response to the Petition, as described further below.

⁷ Alliance for Automotive Innovation, “Auto Innovators: Aligning Policies for a Cleaner Future” (Aug. 5, 2021), <https://www.autosinnovate.org/posts/press-release/aligning-policies-for-a-cleaner-future> (accessed Jan. 31, 2022).

⁸ Alliance for Automotive Innovation, Advanced Technology Vehicle Sales Dashboard, data compiled by the Alliance for Automotive Innovation using information provided by IHS Markit, <https://www.autosinnovate.org/resources/electric-vehicle-sales-dashboard> (accessed Feb. 16, 2022, last updated Dec. 15, 2021).

⁹ Argonne National Laboratory Vehicle and Mobility Systems Group, Battery Electric and Fuel Cell Vehicles Cost Parity, Low Technology Progress, <https://vms.es.anl.gov/case-studies/bev-and-fc-cost-parity/> (accessed Feb. 7, 2022). Note, “Low technology progress represents very small uncertainty in achieving the target; that is, the manufacturers would achieve this target without the advancement of DOE VTO & HFTO programs. High-technology progress represents very high uncertainty in manufacturers achieving the target as they respond to DOE VTO & HFTO targets for the corresponding technology and laboratory year.” See Argonne National Laboratory Energy Systems Division, A Detailed Vehicle Modeling & Simulation Study Quantifying Energy Consumption and Cost Reduction of Advanced Vehicle Technologies Through 2050, ANL/ESD-21/10 (Oct. 10, 2021), available at <https://vms.es.anl.gov/case-studies/u-s-doe-vto-hfto-r-d-benefits/> (accessed Feb. 7, 2021).

¹⁰ Bauer, Hsu, Nicholas, and Lutsey, International Council on Clean Transportation, Charging Up America: Assessing the Growing Need for U.S. Charging Infrastructure Through 2030 (Jul. 2021), available at <https://theicct.org/sites/default/files/publications/charging-up-america-jul2021.pdf> (accessed Feb. 7, 2022).

¹¹ Notice (*supra* note 2) at 73996, (“DOE Should Update Its Regulations To Comport With the Required Statutory Factors and To Support the Goals of DOT’s CAFE Program”).

Impacts of the PEF on CAFE Standards and Compliance

If DOE decides to proceed with a rulemaking on the PEF, it must be coordinated with a NHTSA CAFE rulemaking to avoid unintended consequences of a change in the PEF on regulatory stringency and timing.

The Role of the PEF in Current NHTSA Standard Setting

NHTSA is currently in the final rule stage of setting CAFE standards for model year (MY) 2024-2026 light-duty vehicles, with a final rule scheduled for March 2022.¹² By statute, NHTSA's CAFE standards must be the "maximum feasible" average fuel economy level achievable in that model year.¹³ Although NHTSA is statutorily prohibited from considering the fuel economy of vehicles operating on alternative fuels including electricity¹⁴ in its determination of maximum feasible standards,¹⁵ it nevertheless included battery electric and plug-in hybrid electric vehicles in its assessments for the proposed rule.¹⁶ Auto Innovators commented in opposition to this approach in response to NHTSA's proposed rule. (See Attachment 1, Excerpt from Auto Innovators Comments on Proposed MY 2024-2026 CAFE Standards.)

A consequence of NHTSA including plug-in vehicles in its determination of CAFE standards is that the PEF, at its current value, underlies NHTSA's analysis. Auto Innovators calculates that in NHTSA's assessment of proposed MY 2026 standards, the inclusion of plug-in electric vehicles adds 4.0 MPG to the achieved fleet fuel economy in MY 2026 relative to a case wherein the average fuel economy calculation excludes plug-in electric vehicles.¹⁷ Thus, there is a demonstrable effect of the PEF on NHTSA's assessment of maximum feasible standards. If the PEF were to be lowered, NHTSA's proposed approach would find lower achieved fleet fuel economy for a given technology mix that includes plug-in electric vehicles, potentially resulting in a different finding of maximum feasible fuel economy standards.

To avoid the unintended consequence of changing the PEF on NHTSA's findings of maximum feasible fuel economy, a PEF rulemaking must be coordinated with CAFE rulemaking so that it can

¹² Fall 2021 Unified Agenda of Regulatory and Deregulatory Actions, Department of Transportation, RIN 2127-AM34, <https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202110&RIN=2127-AM34> (accessed Feb. 4, 2022).

¹³ 49 U.S.C. § 32902(b)(2)(B).

¹⁴ 49 U.S.C. § 32901(a)(1)(J).

¹⁵ 49 U.S.C. § 32902(h)(1) and (2).

¹⁶ Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks (Notice of Proposed Rulemaking), 86 Fed. Reg. 49602 (Sep. 3, 2021), hereinafter "CAFE Proposal". For example, "...NHTSA has considered and accounted for California's ZEV [Zero Emission Vehicle] mandate (and its adoption by the other [sic] Section 177 states) in developing the baseline for this proposal" at 49793.

¹⁷ Calculation of harmonic sales-weighted average of "FE Compliance" with and without BEVs and PHEVs in the Vehicles Report output file, Alternative 2 (NHTSA proposal) from NHTSA standard-setting model files, CAFE Compliance and Effects Modeling System, 2021 Proposed Rule for Model Years 2024-2026 Passenger Cars and Light Trucks, <https://www.nhtsa.gov/corporate-average-fuel-economy/cale-compliance-and-effects-modeling-system> (accessed Feb. 25, 2022).

properly inform the standards if NHTSA includes plug-in electric vehicles in setting maximum feasible standards, despite the statutory prohibition. Although PEF rulemaking was not previously coordinated with NHTSA CAFE rulemaking, the projected growth in EV market share makes coordination an important consideration at this time. The next opportunity for such coordination is in rulemaking for standards for model years 2027 and later, expected to be completed no later than July 2024.¹⁸

The PEF Inherently Affects Manufacturer Compliance Plans

Automakers have a reliance interest in the PEF when developing their CAFE compliance plans in accordance with NHTSA standards utilizing a specific PEF value. A reduction in the value of the PEF would negatively impact compliance plans, requiring the development of corrective actions, and/or the payment of civil penalties.¹⁹ Automakers are afforded at least 18 months of lead-time when CAFE standards are increased.²⁰ We believe that similar lead-time should be provided if DOE decides to proceed with an action that lowers the PEF. Such rulemaking would, again, be best accomplished through a rulemaking coordinated with the NHTSA CAFE rulemaking for 2027 and later model years.

If Undertaken, Action on the PEF Should Seek Greater Regulatory Harmonization

The U.S. EPA regulates light-duty vehicle GHG emissions, which is analogous to the regulation of light-duty vehicle fuel economy under NHTSA's CAFE program. Historically, EPA and NHTSA have sought to coordinate and harmonize their respective GHG and CAFE standards.²¹ However, differences remain including the treatment of electric vehicles under the NHTSA CAFE and EPA GHG programs. These differences generally make compliance with NHTSA's CAFE program more challenging if the NHTSA CAFE and EPA GHG standards are numerically equivalent. (I.e., if the GHG standards are converted to fuel economy standards based only on the carbon content of gasoline or vice versa.)

Harmonization could be increased in a DOE PEF rulemaking to help address differences in the treatment of electric vehicles between the EPA GHG and NHTSA CAFE programs. EPA recognizes that electric vehicles have zero tailpipe emissions. In contrast, electric vehicle fuel economy is assessed based on the PEF. In its current form, the PEF yields an EV fuel economy that is relatively high, equating to relatively low, but not zero GHG emissions. For example, the 2022 Tesla Model Y has an

¹⁸ See Executive Order 14037.

¹⁹ We further note that NHTSA recently proposed to increase CAFE civil penalties by 255%, from \$5.50 per 0.1 MPG to \$14 per 0.1 MPG. Department of Transportation National Highway Traffic Safety Administration, Supplemental Notice of Proposed Rulemaking: Civil Penalties, 86 Fed. Reg. 46811 (Aug. 20, 2021).

²⁰ 49 U.S.C. § 32902(a).

²¹ See, e.g., CAFE Proposal (*supra* note 16) at 49793. "There are differences between the two agencies' programs that make NHTSA's CAFE standards and EPA's GHG standards not perfectly one-to-one (even besides the fact that EPA regulates other GHGs besides CO₂, EPA's CO₂ standards also differ from NHTSA's in a variety of ways, often because NHTSA is bound by statute to a certain aspect of CAFE regulation). NHTSA endeavors to create standards that meet our statutory obligations and still avoid requiring manufacturers to build multiple fleets of vehicles for the U.S. market."

assessed CAFE compliance fuel economy of 430.0 miles per gallon (MPG).²² Based on the generally accepted value of 8,887 grams carbon dioxide per gallon of gasoline (g CO₂/gal), the GHG equivalent of 430.0 MPG is 21 g CO₂ per mile. Other model year 2022 battery electric vehicles have a CAFE rating equivalent up to 43 g CO₂ / mile.²³ In the past, the penetration of EVs was low enough that this difference was not significant to harmonization between the GHG and CAFE rules. However, in the present CAFE rulemaking (and for future rules), the difference between the PEF-based fuel economy and zero tailpipe GHG emissions will become significant.

Thus, unless the difference in the treatment of electric vehicles is accounted for either through the PEF or as an adjustment in CAFE standard-setting, a manufacturer that focuses on the production of electric vehicles as a significant GHG compliance pathway would subsequently have to invest additional funds in technology for CAFE compliance above and beyond that required for GHG compliance (or potentially become subject to CAFE non-compliance civil penalties). This sort of dis-harmonization would likely discourage manufacturers from investing in and selling as many EVs as they might otherwise.

Instead, we suggest that if DOE decides to undertake a PEF rulemaking, that it should consider the potential benefits of establishing a higher PEF that would result in fuel economy approaching an equivalent to the EPA zero tailpipe CO₂ emission value.

Do No Harm

In deciding whether to undertake rulemaking action in response to the Petition, and if so, what actions to propose, DOE should follow the principle of “do no harm.” Unlike during prior PEF rulemaking actions, when the EV market generally consisted of limited-utility neighborhood electric vehicles, the current petition envisions rulemaking in a time of transition where fully functional EVs are a small but growing part of the U.S. market. However, much uncertainty remains in their market and in market-supporting actions such as infrastructure development, purchase incentives, battery cost reductions, and supply chain development. The transition continues to need supportive policies that help us to reach our collective goals for the development and increased availability of EVs.

The current PEF includes the Fuel Content Factor to ensure consistency with existing regulatory and statutory procedures, provide similar treatment to manufacturers of all types of alternative fuel vehicles, and allow for simplicity and ease of use.²⁴ As noted in the Petition, the Fuel Content Factor results in an assessed fuel economy roughly seven times higher than would be calculated based on only DOE’s gasoline-equivalent energy content of electricity.²⁵ From a practical perspective, the Fuel

²² CAFE compliance fuel economy calculated as $MPG = PEF / (kWh/100 \text{ miles}) \times (1 \text{ kWh} / 1000 \text{ Wh}) = (82,049 \text{ Wh/gal}) / (19.0809 \text{ kWh}/100 \text{ miles}) \times (1 \text{ kWh}/1,000 \text{ Wh}) = 430.0$. See FuelEconomy.gov, 2022 Datafile, available at <https://fuelconomy.gov/feg/download.shtml> (accessed Feb. 18, 2022), Tesla Model Y RWD, Comb Unadj FE - Conventional Fuel for electrical energy consumption (kWh/100 miles).

²³ Auto Innovators analysis of MY 2022 data from FuelEconomy.gov.

²⁴ Electric and Hybrid Vehicle Research, Development, and Demonstration Program; Petroleum Equivalent Fuel Economy Calculation (Final Rule), 65 Fed. Reg. 36986, 36987 (Jun. 12, 2000), hereinafter “PEF Rule”.

²⁵ Notice (*supra* note 2) at 73996, column 1.

Content Factor serves to encourage the selection of electric vehicles over other incumbent technologies. For example, the 2022 Tesla Model Y's CAFE value is 430.0 MPG with the current PEF of 82,049 watt-hours per gallon (Wh/gal).²⁶ If, instead, only the gasoline-equivalent energy content of electricity (12,307 Wh/gal, as currently derived by DOE²⁷) were used, the assessed value would be 64.5 MPG, a value exceeded by a number of non-plug-in hybrid vehicles.²⁸ If the assessed electric vehicle fuel economy is less than that of lower cost alternative technologies with more proven market track records, manufacturers could favor those technologies over electric vehicles.

Modifying the PEF in a manner that reduces its value at this time would serve to discourage, rather than encourage, the adoption of electric vehicles, contrary to the Administration's goals. Moreover, given the still nascent market conditions for electric vehicles, now is not the time to take action that would reduce the PEF. Instead, it is the time to maintain, or to even increase the PEF, for example by updating the "National Average Electricity Generation and Transmission Efficiencies"²⁹ to account for the increasing proportion and efficiency of natural gas, wind, and solar-derived electricity as well as to maintain consistency in the CAFE treatment of alternative fuels.

DOE Can Include the Fuel Content Factor Within its Statutory Considerations

The inclusion of the Fuel Content Factor is entirely consistent with the statutory considerations to be undertaken by DOE. In determining the equivalent petroleum-based fuel economy, DOE is required to consider "the need of the United States to conserve all forms of energy and the relative scarcity and value to the United States of all fuel used to generate electricity."³⁰ This requirement necessarily includes an evaluation of the need to conserve both petroleum and electrical energy ("all forms of energy"), and reasonably includes the relative need of the United States to conserve both petroleum and electrical energy. To the extent the United States needs to conserve petroleum energy relative to electrical energy, it is also reasonable to incentivize the sale of electric vehicles that will displace the sale of petroleum-fueled vehicles.

Historically, U.S. regulatory agencies have interpreted the need to conserve energy in the context of scarcity of fuels and various geopolitical considerations. More recently, regulatory agencies have also considered the need to conserve energy in the context of related greenhouse gas emissions from the production and consumption of various forms of energy. In its recent notice of proposed rulemaking for MY2024-2026 fuel economy standards, for instance, NHTSA noted that

²⁶ 10 CFR § 474.3.

²⁷ PEF Rule (*supra* note 24) at 36987. See "E_g".

²⁸ FuelEconomy.gov, 2022 Datafile (available at <https://fuelconomy.gov/feg/download.shtml>), comparison of calculated 64.5 MPG value to combined unadjusted fuel economies of non-plug-in and non-fuel cell vehicles.

²⁹ PEF Rule (*supra* note 24) at 36987.

³⁰ 49 U.S.C. § 32904(a)(2)(B)(iii).

the need of the United States to conserve energy must include serious consideration of the energy security risks of continuing to consume oil, which more stringent fuel economy standards can reduce. Reducing our Nation's climate impacts can also benefit our national security.³¹

Consequently, there is ample statutory support and regulatory precedent for DOE to consider how climate change considerations and the resulting national security benefits support “the need of the United States to conserve all forms of energy.” Given the declining carbon intensity of electrical energy production in the U.S., and higher efficiency of electric motors relative to internal combustion engines, it is logical and consistent with the statute to continue to encourage the substitution of electric vehicles for petroleum-fueled vehicles by incentivizing their availability and sale in the context of CAFE regulations and the PEF.

Impact of the PEF on Fuel Economy Improvements of Petroleum-Fueled Vehicles

Other stakeholders may assert that the inclusion of the Fuel Content Factor in the PEF allows manufacturers to develop less fuel-efficient petroleum-fueled vehicles than they would otherwise be required to. Such views ignore both Congress’ intent to incentivize the use of alternative fuels and the presence of the complementary EPA GHG program that also serves to require fuel economy improvements.

The statutory and legislative history of alternative fuel provisions in CAFE law demonstrate that Congress’ intent was to incentivize manufacturers to produce and sell dedicated and dual fueled alternative fuel vehicles by allowing them to be included in a manufacturer’s compliance fleet while not being included in the standard-setting; the intended result is that automakers producing and selling such vehicles will more easily comply with the standards. This exclusion first appeared in the Alternative Motor Fuels Act of 1988 (“AMFA”), Pub. L. No. 100-494, but it was limited to methanol, which at the time was the dominant form of alternative fuel. The statute amended Section 502(e) of EPCA to provide that in determining maximum feasible fuel economy, “the Secretary shall not consider the fuel economy of alcohol powered automobiles or natural gas powered automobiles ...” Pub. L. No. 100-494, § 6, 102 Stat. 2441, 2452 (1988). Representative John Dingell explained the intent of the amendment as follows:

We ... intend that the Secretary [of Transportation] shall not take into account the extent to which manufacturers have produced alternative fueled vehicles whenever the Secretary decides whether to amend the CAFE standard for cars or light trucks. ... *A provision is included in the*

³¹ CAFE Proposal (*supra* note 16) at 49604. Note that NHTSA’s promulgation of corporate average fuel economy standards similarly requires the agency to consider “the need of the United States to conserve energy,” among other statutory factors. 49 U.S.C. § 32902(f). Petitioners here have long advocated that this factor gives NHTSA broad discretion to include consideration of climate impacts of GHG emissions. *See, e.g.*, Joint Summary Comments of Environmental, Advocacy, and Science Organizations, Regulations.gov Docket ID NHTSA-2017-0069-0557 at 15, “NHTSA’s mandate to adopt maximum feasible fuel economy standards reflecting the need of the United States to conserve energy requires factoring in the climate-altering impacts of consuming oil.” (Internal quotation marks removed.) The same logic would apply here to give DOE discretion to use the Fuel Content Factor as an incentive for the greater deployment of electric vehicles.

legislation to ensure that the incentives provided by this bill are not erased by the Secretary's setting the CAFE standard for cars or trucks at a level that assumes a certain penetration of alternative fueled vehicles. ... It is intended that this examination [of maximum feasible fuel economy] will be conducted without regard to the penetration of alternative fuel vehicles in any manufacturer's fleet, in order to ensure that manufacturers taking advantage of the incentives offered by this bill do not find DOT including those incentive increases in the manufacturer's "maximum fuel economy capability."³²

This exclusion was subsequently expanded to include electric vehicles in the Energy Policy Act of 1992.³³ Again, the legislative history shows that Congress intended for the statute to incentivize investments in alternative fueled by excluding them from the calculation of a "maximum feasible" fuel economy standard given the uncertainties in the market:

The widespread use for motor vehicles of fuels other than gasoline—such as methanol, ethanol, other alcohols, natural gas ... and electricity—faces several problems. The current market price of gasoline is lower than the current market price of most alternative fuels. There must be major investments in new production plants for alternative fuels and in networks of stations for alternative fuels. There must also be major investments in new cars or engines or converting existing vehicles.³⁴

Moreover, the EPA GHG program provides an existing regulatory backstop that prevents manufacturers from reducing fuel economy of petroleum-fueled vehicles in response to the inclusion of electric vehicles at relatively high fuel economies in CAFE averages. The primary source of greenhouse gas emissions from light-duty vehicles is the combustion of carbon-containing fuels. Thus, the reduction of GHG emissions is largely dependent on increasing fuel economy and/or the production of electric vehicles (the behavior the current PEF incentivizes).

Request for Docket EE-RM-99-PEF

Auto Innovators respectfully requests that DOE make the docket EE-RM-99-PEF available for electronic public viewing. This docket contains DOE analysis supporting the prior PEF rulemaking,³⁵ and is therefore pertinent to an assessment of whether and if so, how, to update the PEF.

³² 134 Cong. Rec. H8091 (daily ed. Sept. 23, 1988) (*emphasis* added).

³³ See Pub. L. No. 102-486, § 403, 106 Stat. 2776, 2876 (amending EPCA section 502(e) to provide that "[f]or purposes of this section, the Secretary shall not consider the fuel economy of dedicated automobiles.").

³⁴ 5 H.R. Rep. No. 102-474, at 34 (1992). The current text of the dedicated-automobile exclusion, see supra p. 2, is a product of Pub. L. No. 103-272 (1994), which transferred EPCA from title 15 to title 49 "without substantive change." H.R. Rep. No. 103-130, at 1 (1994).

³⁵ 65 Fed. Reg. 36896 (Jun. 12, 2000).

Conclusion

Unlike prior rulemakings to establish a PEF, the growing market share of EVs adds significant complexity to the decision on whether to undertake a rulemaking at this time and, if so, what actions to propose. Whatever action DOE decides to take, it needs to consider the continuing need to encourage EV investments, interactions with both NHTSA's CAFE and EPA's GHG rulemaking, and automakers' reliance interests on the present PEF to avoid unintended consequences. DOE should be particularly careful to not upset NHTSA's balancing of statutory considerations in setting maximum feasible CAFE standards and should coordinate any rulemaking with CAFE rulemaking.

At this time, the fuel content factor can and should be included under DOE's statutory factors within "the need of the United States to conserve all forms of energy and the relative scarcity and value to the United States of all fuel used to generate electricity."³⁶

Thank you for your consideration of our comments. If you have any questions, please contact Michael Hartrick at mhartrick@autosinnovate.org.

³⁶ 49 U.S.C. § 32904(a)(2)(B)(iii).

Attachment 1: Excerpt from Auto Innovators Comments on Proposed MY 2024-2026 CAFE Standards

The following comments are an excerpt from Auto Innovators' comments on NHTSA's recently proposed model year 2024-2026 CAFE standards that discuss NHTSA's inclusion of electric vehicles in standard setting and our opposition thereto. The original complete comment to NHTSA is available at Regulations.gov, Docket ID NHTSA-2021-0053-1492.

NHTSA Has Improperly Considered Electric Vehicles in its Standard-Setting

In establishing its proposed alternative of a nominal eight percent increase in the annual stringency of fleetwide MY 2024-2026 CAFE standards ("Alternative 2"), it appears that NHTSA has improperly considered EVs in its standard-setting. The preamble to the CAFE NPRM indicates that NHTSA has included BEVs in the "baseline" used in selecting Alternative 2,³⁷ and the CAFE Model analysis for standard-setting both includes the alternative fuel benefits of EVs and adds EV sales in response to increasingly stringent standard alternatives. EV sales during the years covered by the regulations were modeled in the analysis supporting the standards. NHTSA's doing so violates important restrictions in the Energy Policy & Conservation Act, as amended by the Energy Independence and Security Act. We therefore request that NHTSA redo its standard-setting analyses to omit EVs and their benefits from the baseline and from its modeling. Auto Innovators believes that a standard-setting properly constructed in this way will yield regulations that appropriately incentivize EV technology, as intended by Congress.

EPCA Prohibits NHTSA From Considering BEVs in its Determination of Maximum Feasible Fuel Economy Standards

EPCA requires NHTSA to "prescribe by regulation average fuel economy standards for automobiles manufactured by a manufacturer in that model year,"³⁸ and in doing so the agency "shall consider technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy."³⁹ EPCA, however, includes an important express limitation on what NHTSA may, and may not, take into account in determining what the "maximum feasible" fuel economy standard is:

In carrying out subsections (c), (f), and (g) of this section, the Secretary of Transportation—

- (1) may not consider the fuel economy of dedicated automobiles;
- (2) shall consider dual fueled automobiles to be operated only on gasoline or diesel fuel; and

³⁷ See, e.g., CAFE Proposal (*supra* note 16) at 49602, 49622, 49640, and 49793.

³⁸ 49 U.S.C. § 32902(a).

³⁹ 49 U.S.C. § 32902(f).

(3) may not consider, when prescribing a fuel economy standard, the trading, transferring, or availability of credits under section 32903.⁴⁰

The term “dedicated automobile” is defined in EPCA as “an automobile that operates only on alternative fuel,”⁴¹ and electricity is one such alternative fuel.⁴² Similarly, the term “dual fueled automobile means “an automobile that – (A) is capable of operating on alternative fuel... and on gasoline or diesel fuel...”⁴³ Therefore, in promulgating fuel economy standards under EPCA, NHTSA is prohibited from “consider[ing]” the fuel economy of BEVs. Also, for dual fueled automobiles such as PHEVs, NHTSA is required to only consider their operation on gasoline or diesel fuel.

The statutory and legislative history of this provision demonstrates that its intent was to incentivize manufacturers to produce and sell dedicated and dual fueled alternative fuel vehicles by allowing them to be included in a manufacturer’s compliance fleet while not being included in the standard-setting; the intended result is that automakers producing and selling such vehicles will have an easier time complying with the standards. This exclusion first appeared in the Alternative Motor Fuels Act of 1988 (“AMFA”), Pub. L. No. 100-494, but it was limited to methanol, which at the time was the dominant form of alternative fuel. The statute amended Section 502(e) of EPCA to provide that in determining maximum feasible fuel economy, “the Secretary shall not consider the fuel economy of alcohol powered automobiles or natural gas powered automobiles ...” Pub. L. No. 100-494, § 6, 102 Stat. 2441, 2452 (1988). Representative John Dingell explained the intent of the amendment as follows:

We ... intend that the Secretary [of Transportation] shall not take into account the extent to which manufacturers have produced alternative fueled vehicles whenever the Secretary decides whether to amend the CAFE standard for cars or light trucks. ... ***A provision is included in the legislation to ensure that the incentives provided by this bill are not erased by the Secretary’s setting the CAFE standard for cars or trucks at a level that assumes a certain penetration of alternative fueled vehicles.*** ... It is intended that this examination [of maximum feasible fuel economy] will be conducted without regard to the penetration of alternative fuel vehicles in any manufacturer’s fleet, in order to ensure that manufacturers taking advantage of the incentives offered by this bill do not find DOT including those incentive increases in the manufacturer’s “maximum fuel economy capability.”⁴⁴

This exclusion was subsequently expanded to include electric vehicles in the Energy Policy Act of 1992.⁴⁵ Again, the legislative history shows that Congress intended for the statute to incentivize

⁴⁰ 49 U.S.C. § 32902(h).

⁴¹ 49 U.S.C. § 32901(a)(8).

⁴² 49 U.S.C. § 32901(a)(1)(J).

⁴³ 49 U.S.C. § 32901(a)(9).

⁴⁴ 134 Cong. Rec. H8091 (daily ed. Sept. 23, 1988) (*emphasis* added).

⁴⁵ See Pub. L. No. 102-486, § 403, 106 Stat. 2776, 2876 (amending EPCA section 502(e) to provide that “[f]or purposes of this section, the Secretary shall not consider the fuel economy of dedicated automobiles.”).

investments in alternative fueled by excluding them from the calculation of a “maximum feasible” fuel economy standard given the uncertainties in the market:

The widespread use for motor vehicles of fuels other than gasoline—such as methanol, ethanol, other alcohols, natural gas ... and electricity—faces several problems. The current market price of gasoline is lower than the current market price of most alternative fuels. There must be major investments in new production plants for alternative fuels and in networks of stations for alternative fuels. There must also be major investments in new cars or engines or converting existing vehicles.⁴⁶

NHTSA has consistently interpreted the exclusions currently found in 49 U.S.C. § 32902(h) as preventing the agency from accounting for BEVs in its standard-setting, either as part of the baseline or as part of the modeling that supports the final standards. For instance, during the Obama Administration, when setting MY 2011 CAFE standards, NHTSA explained the dedicated-automobile exclusion as follows:

49 U.S.C. § 32902(h) expressly prohibits NHTSA from considering the fuel economy of “dedicated” automobiles in setting CAFE standards. Dedicated automobiles are those that operate only on an alternative fuel, like all-electric or natural gas vehicles. Dedicated vehicles often achieve higher mile per gallon (or equivalent) ratings than regular gasoline vehicles, so this prohibition prevents NHTSA from raising CAFE standards by averaging these vehicles into our determination of a manufacturer’s maximum feasible fuel economy level.⁴⁷

NHTSA has also applied Section 32902(h) to its consideration of the “baseline” fleet. Another portion of Section 32902(h) prohibits NHTSA from considering the trading, transferring, or availability of credits under section 32903—the same as NHTSA is prohibited from considering BEVs.⁴⁸ In applying that constraint, NHTSA explained in its Light Truck Final Rule for MYs 2008-2011 that the statute “prohibits us” from taking account of the credits available for the sale of flex-fueled vehicles “in determining the maximum feasible fuel economy standard. *Accordingly, the baseline projection cannot reflect those credits.*”⁴⁹ Up until now, NHTSA’s practice has been faithful to the text and the intent of the exclusions in Section 32902(h) by excluding BEVs and the other prohibited considerations from its baseline and its analyses setting fuel economy standards.

⁴⁶ 5 H.R. Rep. No. 102-474, at 34 (1992). The current text of the dedicated-automobile exclusion, see supra p. 2, is a product of Pub. L. No. 103-272 (1994), which transferred EPCA from title 15 to title 49 “without substantive change.” H.R. Rep. No. 103-130, at 1 (1994).

⁴⁷ 74 Fed. Reg. 14196, 14387 (Mar. 30, 2009) (footnote omitted).

⁴⁸ 49 U.S.C. § 32902(h)(3).

⁴⁹ 71 Fed. Reg. 17566, 17582 (Apr. 6, 2006) (citing 49 U.S.C. § 32902(h)) (*emphasis added*), remanded on other grounds by *Center for Biological Diversity v. NHTSA*, 538 F.3d 1172, (9th Cir. 2008).

NHTSA Has Improperly Considered Sales of BEVs and PHEVs in its Determination of Maximum Feasible Fuel Economy Standards

In the current rulemaking, NHTSA has considered EVs in two ways that conflict with the text and intent of EPCA and that are inconsistent with past practice.

First, the NPRM makes it clear that NHTSA is accounting for BEVs in what it calls its “baseline” or “No-Action alternative” and in other action alternatives for its standard-setting analysis.⁵⁰ NHTSA also explains how EVs are included in all regulatory alternatives in its Technical Support Document (“TSD”).⁵¹ The TSD goes on to explain how NHTSA built ZEV Mandate compliance into its modeling by “converting vehicles that have been identified as potential ZEV candidates into battery-electric vehicles (BEVs) at the first redesign opportunity, so that a manufacturer’s fleet meets calculated ZEV credit requirements.”⁵² It is therefore clear that NHTSA’s compliance modeling, which undergirds its entire standard-setting analysis, considers the fuel economy of BEVs the agency projects will be produced and sold to comply with the ZEV Mandate.

The extent to which BEVs and PHEVs are included in the analysis of the baseline fleet (Alternative 0) and in the other alternatives considered in the proposal is demonstrated in Figures IV-1 and IV-2. In the NHTSA standard-setting analysis, BEV market share grows from less than two percent in MY 2020 to almost five percent by MY 2026 in the baseline fleet (Alternative 0). In Alternative 2, the proposed standards, BEV market share increases to over six percent by 2026. Despite their exclusion from NHTSA’s evaluation of ZEV Mandate compliance, PHEV market share grows from less than one percent in MY 2020 to almost two percent in MY 2026 under Alternative 0 and to about seven percent under Alternative 2. The combined BEV and PHEV market share grows from a little over two percent in MY 2020 to over six percent and 14 percent in MY 2026 for Alternatives 0 and 2, respectively (Figure IV-3).

NHTSA has also considered the alternative fuel operation of dual fueled vehicles (specifically plug-in hybrids) in violation of Section 32902(h)(2). The Vehicles Report output file makes it clear that the compliance fuel economy used by the model (the “FE Compliance” field) includes the alternative fuel portion of vehicle operation for PHEVs. For the purposes of the standard-setting analysis, NHTSA should only consider the fuel economy of a PHEV when operating on conventional fuel. For example, the technology effectiveness database could include one value reflective of gasoline-powered hybrid

⁵⁰ See 86 Fed. Reg. at 49793 (“NHTSA has considered and accounted for California’s ZEV mandate (and its adoption by the other [sic] Section 177 states) in developing the baseline for this proposal.”); *id.* at 49622 (“NHTSA believes that it is reasonable to include ZEV in the baseline for this proposal regardless of whether California receives a waiver of preemption under the Clean Air Act (CAA) . . .”); *id.* at 49749 (“As the baseline against which the Action Alternatives are measured, the No-Action Alternative also includes several other actions that NHTSA believes will occur in the absence of further regulatory action. . . NHTSA has included California’s ZEV mandate as part of the No-Action Alternative.”)

⁵¹ See National Highway Traffic Safety Administration, *Technical Support Document: Proposed Rulemaking for Model Years 2024-2026 Light-Duty Vehicle Corporate Average Fuel Economy Standards* (Aug. 2021) at 39. (“All of the regulatory alternatives considered here also include NHTSA’s estimates of ways each manufacturer could introduce new PHEVs and BEVs in response to ZEV mandates.”)

⁵² *Id.* at 104. See also *id.* at 109 (“Third, we assume that manufacturers will meet their ZEV credit requirements in 2025 though the production of battery electric vehicles (BEVs).”)

operation, and another value, not used for standard-setting, that reflects combined gasoline and off-board electricity-powered operation.

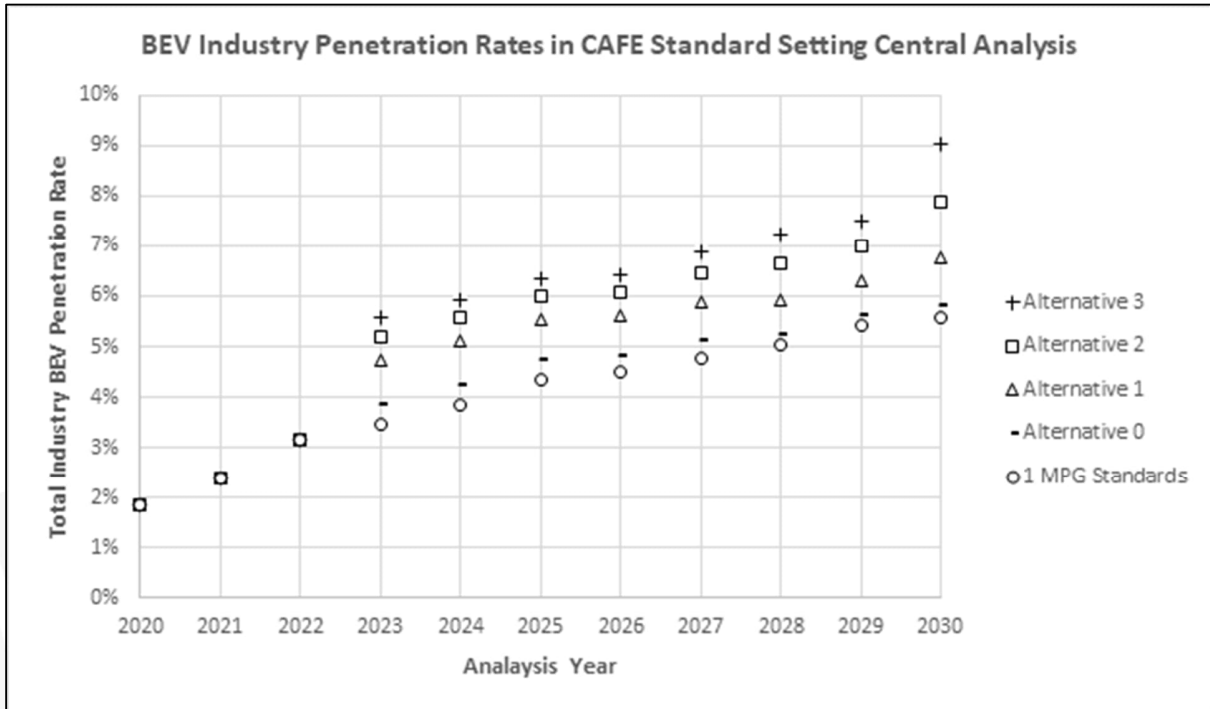


Figure IV-1: BEV Industry Penetration Rates in CAFE Standard-Setting Central Analysis

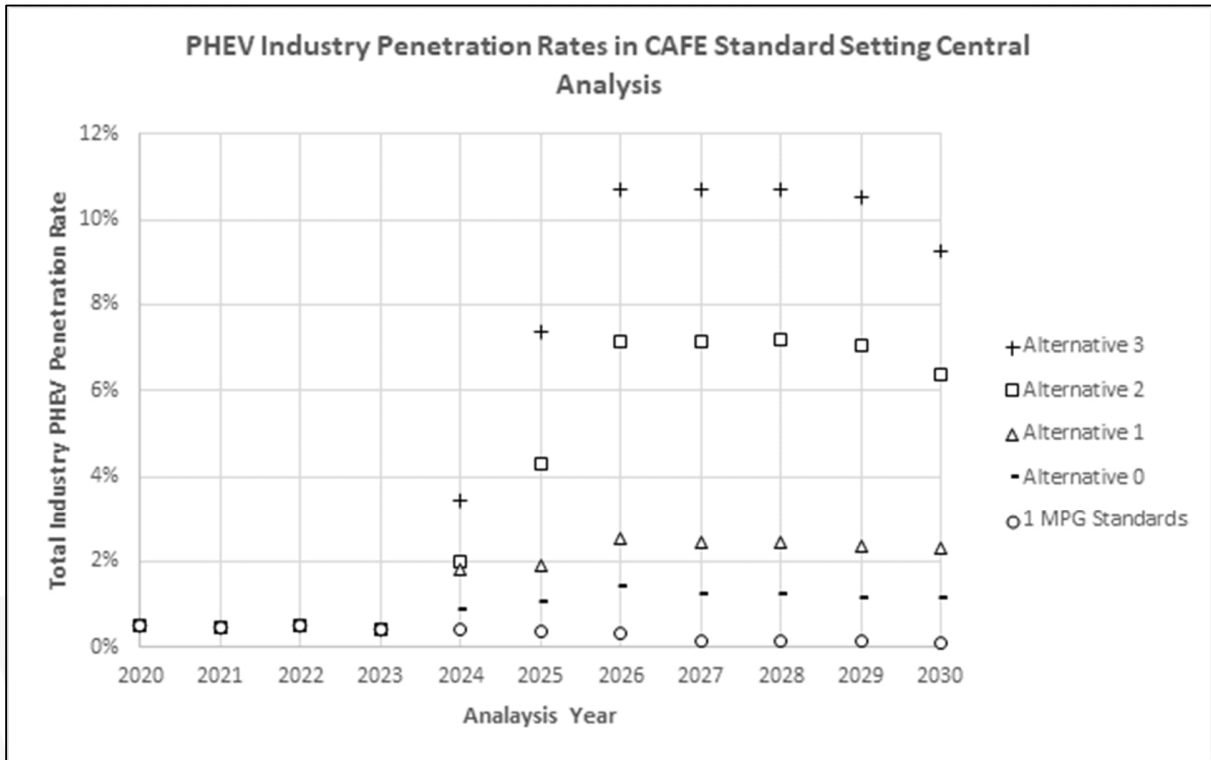


Figure IV-2: PHEV Industry Penetration Rates in CAFE Standard-Setting Central Analysis

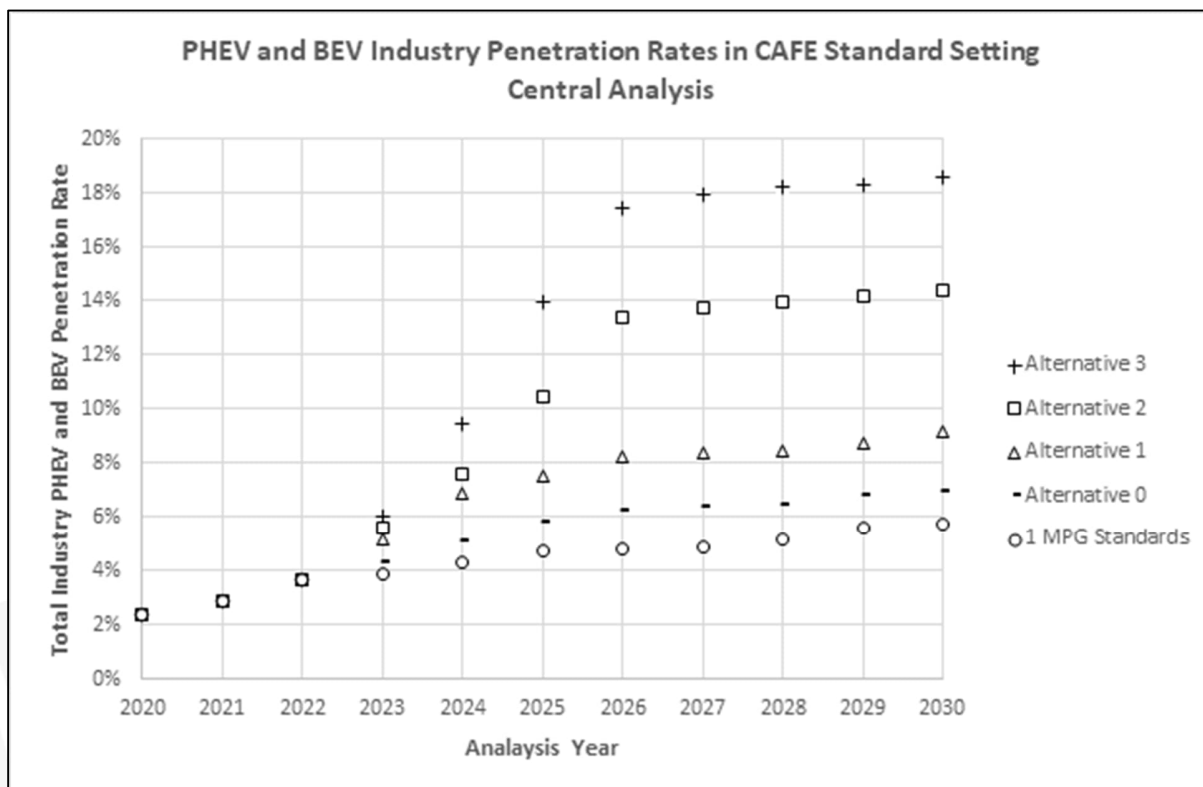


Figure IV-3: Combined PHEV and BEV Industry Penetration Rates in CAFE Standard-Setting Central Analysis

It is therefore clear that the penetration of EVs in the light vehicle market *and their fuel economy* are important factors in the agency’s standard-setting here. NHTSA’s proposed determination that the steep fuel economy curves set forth in Alternative 2 are technologically feasible and economically practicable is based on (a) the high penetration of EVs in the light-duty fleet during the covered years (MYs 2024-2026) to account for the ZEV mandate, and (b) the high imputed fuel economy values attributed to those EVs. If, hypothetically, EVs were to have fuel economy values of (say) 15 mpg, then it would be impossible to support the current proposal.

NHTSA appears to be relying, in part, on the “other motor vehicle standards of the government” prong of 49 U.S.C. § 32902(f) to justify its consideration of BEVs in its standard-setting.⁵³ This justification is unavailing for two separate and independent reasons.

First, it violates the well-established canon of statutory construction *generalia specialibus non derogant*—that is: if there is a conflict between a general provision and a specific provision in a statute, the specific provision prevails.⁵⁴ This is especially true where “the two are interrelated and closely

⁵³ See, CAFE Proposal (*supra* note 16) at 49639 (“[W]hen considering other standards that may affect fuel economy compliance pathways, DOT includes projected zero emissions vehicles (ZEV) that would be required for manufacturers to meet standards in California and Section 177 States, per the waiver granted under the Clean Air Act.”).

⁵⁴ See *RadLAX Gateway Hotel, LLC v. Amalgamated Bank*, 566 U.S. 639, 645 (2012) (“it is a commonplace of statutory construction that the specific governs the general.”).

positioned, both in fact being parts of [the same statutory scheme].”⁵⁵ Here, there is specific and express prohibition against NHTSA considering dedicated alternative fuel vehicles and the operation of dual-fueled vehicles on alternative fuels in its standard-setting, and those prohibitions trump the more general provision requiring NHTSA to consider other motor vehicle standards of the government.

Second, NHTSA’s reliance on that section of EPCA would thwart Congress’s intent in expanding the alternative fuel exclusion in Section 502(e) to cover EVs. The Energy Policy Act of 1992 was enacted against the backdrop of California’s promulgation of ZEV regulations. Congress amended EPCA to include BEVs (among other “dedicated automobiles”) in order to prevent NHTSA from including compliance with those regulations in its standard-setting calculations—precisely what NHTSA purports to do here. Congress did so because then—as today—electric vehicles faced significant market uncertainty.⁵⁶

NHTSA also inappropriately allows the CAFE Model standard-setting analysis to add BEVs and PHEVs in response to the No-Action and action alternatives considered. Although the CAFE Model is constrained from applying BEV or FCEV technology in the specific standard-setting years (other than that added to the baseline in response to the ZEV Mandate, as discussed above), PHEV technology does not appear so constrained.^{57,58} Moreover, as a result of the CAFE Model’s multiyear planning feature, under which technology can be added in advance of standard-setting years in response to the following years’ simulated standards, significant additional BEVs are added in model year 2023 (Figure IV-1) and additional PHEVs are added during the standard-setting years (Figure IV-2), with their electrical portion of operation considered in their compliance fuel economy, as noted above. NHTSA describes, “Changes are shown to occur in MY 2023 even though NHTSA is not explicitly proposing to regulate that model year because NHTSA anticipates that manufacturers could make changes as early as that model year to affect future compliance position (*i.e.*, multi-year planning).”⁵⁹ In the same vein, the multiyear planning function also allows the addition of technology after the standard-setting years, “as some manufacturers and products ‘catch up’ to the standards.”⁶⁰ Notwithstanding our concerns with including the ZEV mandate in the baseline (Alternative 0), additional EV volume added in response to

⁵⁵ *HCSC-Laundry v. United States*, 450 U.S. 1, 6 (1981) (*per curiam*).

⁵⁶ See H.R. Rep. No. 102-217, pt. 1, at 12 (1991) (“[T]he American public must be sold not only on the environmental value of EV’s, but also on their practical transport, safety and economic value. ... Other barriers above and beyond technology and cost considerations that will affect the commercialization of electric vehicles include the lack of a current infrastructure ...”).

⁵⁷ *Draft CAFE Model Documentation*, National Highway Traffic Safety Administration (Aug. 2021) at 33. (“Each regulatory scenario definition includes a Standard Setting Year field, which specifies whether new standards are being set during a given year. Technologies that convert a vehicle to a battery-electric or a fuel-cell vehicle (e.g., BEV200 or FCV) will be further restricted from application during these “standard setting” years. If, however, the vehicle in question is designated as a “ZEV Candidate” by the user in the market data inputs, this restriction will not apply.”)

⁵⁸ In itself, model selection of PHEVs is not a violation of 49 U.S.C. § 32902(h)(2). However, if the electric portion of their operation is included in their consideration, NHTSA would be in violation of the statute. This appears to be the case. The Vehicles Report output file indicates the compliance fuel economy used by the model for various vehicles (“FE Compliance,” column AH). In the Central Analysis standard-setting reference case (output file folder M000000_P0000000_S000000_T00000_3), Alternative 2 (the proposal) has compliance fuel economy for PHEVs equal to the harmonic average of their projected fuel economy on gasoline and that on electricity, an alternative fuel.

⁵⁹ CAFE Proposal (*supra* note 16) at 49757.

⁶⁰ *Id.* at 49620.

the simulated standards (and considering the portion of operation on electricity) is another clear violation of 49 U.S.C. § 32902(h) whether the EVs are added in advance of or after the standard-setting years.

In order to be faithful to both the text and the intent of Section 32902(h), NHTSA must completely exclude the sale of BEVs and the electric portion of the operation of PHEVs from its standard-setting analyses, unless and until Congress modifies the prohibitions against their inclusion in setting maximum feasible standards.