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Petroleum-Equivalent Fuel Economy of Electric Vehicles: In Brief

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The Biden Administration and recent Congresses have supported policies for a transition toward a greater penetration of electric and other alternative-fueled vehicles in the U.S. transportation sector. On August 5, 2021, President Biden signed Executive Order 14037, "Strengthening American Leadership in Clean Cars and Trucks."[1] The order required, among other items, executive agencies to revisit and amend the federal standards that regulate air pollution emissions, greenhouse gas (GHG) emissions, and fuel economy of new passenger cars and light trucks. These standards include the Motor Vehicle Emission and Fuel Standards promulgated by the U.S. Environmental Protection Agency (EPA), the Light-Duty Vehicle GHG Emissions Standards promulgated by EPA, and the Corporate Average Fuel Economy (CAFE) Standards promulgated by the National Highway Traffic Safety Administration (NHTSA). The order also included a nonbinding electrification goal that "50 percent of all new passenger cars and light trucks sold in 2030 be zero-emissions vehicles, including battery electric, plug-in hybrid electric, or fuel cell electric vehicles."

EPA announced its final rule "Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles"—on March 20, 2024.[2] NHTSA announced its final rule—the "Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks for Model Years 2027 and Beyond and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans for Model Years 2030 and Beyond"—June 7, 2024.[3] Further, in the 117th Congress, the Infrastructure Investment and Jobs Act (IIJA, P.L. 117-58) and the law commonly referred to as the Inflation Reduction Act (IRA, P.L. 117-169) provided federal funding and financial incentives for alternative-fueling infrastructure and alternative-fueled vehicle deployment.[4]

Oversight of the Administration's implementation of the vehicle-related provisions in the IIJA and the IRA and of EPA's and NHTSA's automotive rulemakings has been under consideration in the 118th Congress through both hearings and legislation.[5] Motor vehicle electrification and other alternative-fueled vehicles in the United States could have a variety of effects on energy security, the economy, and the environment. The effects of federal rulemakings on the promotion of such vehicle technologies and their share of the vehicle market may continue to be of interest to Congress.

Background

In March 2024, the U.S. Department of Energy (DOE) published a final rule to revise its regulations for calculating a value for the "petroleum-equivalent fuel economy" of electric

[1] Executive Office of the President, "Executive Order 14037 of August 5, 2021, Strengthening American Leadership in Clean Cars and Trucks," 86 *Federal Register* 43583-43585, August 10, 2021.

[2] Environmental Protection Agency (EPA), "Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles," 89 *Federal Register* 27842-28215, April 18, 2024.

[3] National Highway Traffic Safety Administration (NHTSA), "Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks for Model Years 2027 and Beyond and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans for Model Years 2030 and Beyond," pre-publication version, June 7, 2024, https://www.nhtsa.gov/document/cafe-2027-2031-hdpuv-2030-2035-final-rule.

[4] For more information, see CRS In Focus IF12433, *Automobiles, Air Pollution, and Climate Change*, by Richard K. Lattanzio; CRS Report R47675, *Federal Policies to Expand Electric Vehicle Charging Infrastructure*, by Melissa N. Diaz and Corrie E. Clark; and CRS In Focus IF12600, *Clean Vehicle Tax Credits*, by Donald J. Marples and Nicholas E. Buffie.

[5] See, for example, H.R. 7570, Shrinkflation Reduction Act; H.R. 1435, Preserving Choice in Vehicle Purchases Act; and H.R. 4468, Choice in Automobile Retail Sales Act of 2023, among others.

vehicles (EVs).[6] The 2024 rule amends the method of calculation that the agency finalized in June 2000.[7] This calculation is used by NHTSA to determine the fuel economy of EVs for compliance purposes under the CAFE program.[8] DOE's 2024 rule applies to new EVs manufactured in model year (MY) 2027 and beyond. These EVs are to be covered under NHTSA's 2024 final rule.[9] NHTSA's rule established more stringent fuel economy standards for the U.S. fleet of new passenger cars and light trucks, which would increase, on average, at a rate of 2% per year during MYs 2027–2031 for passenger cars, and 2% per year during MYs 2029–2031 for light trucks, among other provisions.[10]

DOE's 2024 rule addresses stakeholder concerns that the previous calculation was out of date and could create a distortion in a manufacturer's average fleetwide fuel economy. They argued that this distortion was caused, in part, by DOE's use of a "fuel content factor" (FCF) in the 2000 rule. Congress had created the FCF in 1975 as a compliance incentive for liquid and gaseous alternative-fueled vehicles under NHTSA's CAFE program. While Congress did not explicitly stipulate the use of the FCF for EVs in 1975, DOE adopted its use in the 2000 rule based on agency interpretations. DOE's 2024 rule phases out the use of the FCF, among other changes. These changes will alter the calculations for measuring the fuel economy of EVs in the CAFE program, which, as discussed below, may lead to a range of potential outcomes in the vehicle manufacturing industry. In April 2024, 13 states and an industry group challenged DOE's 2024 rule in the U.S. Court of Appeals for the 8th Circuit.[11]

For this report, EVs refer to plug-in electric vehicles, which include both (1) battery electric vehicles (BEVs) that use only batteries to power the motor and use electricity from an external source for recharging, and (2) plug-in hybrid electric vehicles (PHEVs), which use an electric motor and an internal combustion engine for power and use electricity from an external source to recharge the batteries. Further, this report does not address EPA's light- and medium-duty vehicle GHG emission standards. As stated above, DOE's 2024 rule revises its regulations for calculating a value for the "petroleum-equivalent fuel economy" of EVs; it does not address emissions of GHG or other air pollutants. Thus, DOE's calculation is not used by the EPA in administering its vehicle standards.

Petroleum-Equivalent Fuel Economy

To assess and compare the energy efficiencies of EVs and other alternative-fueled vehicles in relation to those of petroleum-fueled vehicles under the NHTSA's CAFE program, an analysis must convert the vehicles' fuel consumption inputs into a common unit of measure. For example, in the United States, the fuel economy of a petroleum-fueled vehicle is commonly rated in miles per gallon (MPG), or the number of miles that the vehicle can travel using the energy produced by combusting one gallon of fuel (e.g., gasoline or diesel) in its engine. The fuel economy of an EV is commonly rated in kilowatt hours per 100 miles (kWh/100 mi), or the number of kilowatt

[6] Department of Energy (DOE), Office of Energy Efficiency and Renewable Energy (EERE), "Petroleum-Equivalent Fuel Economy Calculation," 89 *Federal Register* 22041, March 29, 2024.

[7] 10 C.F.R. §474.3.

[8] 49 C.F.R. Part 531.

[9] NHTSA, "Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks for Model Years 2027 and Beyond and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans for Model Years 2030 and Beyond," pre-publication version, June 7, 2024, https://www.nhtsa.gov/document/cafe-2027-2031-hdpuv-2030-2035-final-rule.

[10] Ibid.

[11] Petition for Review, Iowa v. Granholm, No. 24-1721 (8th Cir. Apr. 5, 2024).

hours of electrical power it takes to propel the vehicle 100 miles. Converting the fuel economy units of an EV (kWh/100 mi) into those of a petroleum-fueled vehicle (MPG) results in a value commonly referred to as "miles per gallon equivalent" (MPGe). DOE and EPA report this value on the federal government's fuel economy website and on the fuel economy labels of new automobiles.

For the purposes of calculating NHTSA's CAFE compliance for EVs, however, the agencies are required by statute to include the upstream energy inputs for the various fuel pathways.[12] That is, DOE must incorporate the energy efficiencies of petroleum's production, refining, and distribution, and the energy efficiencies of electricity's generation and transmission, into its petroleum-equivalent fuel economy calculation.[13] This set of calculations is the focus of DOE's 2024 rule.

Agency Authorities

NHTSA's CAFE Standards

The Energy Policy and Conservation Act of 1975 (EPCA; P.L. 94-163), as amended, requires NHTSA to administer CAFE standards for passenger cars beginning in MY1978 and for light trucks (including most pickup trucks, passenger vans, and sport utility vehicles) beginning in MY1979. The standards are designed to conserve energy—and in particular, petroleum—through improvements in automotive fuel economy. They require each auto manufacturer to meet a target for the sales-weighted fuel economy of its entire fleet of new automobiles sold in the United States in each model year. NHTSA is responsible for prescribing the standards and enforcing the civil penalties for non-compliance.[14]

EPA's Determination of a Manufacturer's CAFE

For the purposes of CAFE compliance, EPA is responsible for calculating the average fuel economy of a manufacturer's fleet "in a way prescribed by the [EPA] Administrator."[15] EPA bases its calculations on standardized laboratory test procedures designed to ensure reliable and repeatable reporting across different vehicle manufacturers, models, and makes. These test procedures and calculations are outlined at 40 C.F.R. Part 600.

DOE's "Petroleum Equivalency Factor" (PEF)

The Chrysler Corporation Loan Guarantee Act of 1979 (P.L. 96-185) directed the Secretary of Energy to conduct an evaluation program for the inclusion of EVs in the calculation of average fuel economy and determine "the value and implications of such inclusion as an incentive for the early initiation of industrial engineering development and initial commercialization of electric vehicles in the United States." P.L. 96-185 also amended the CAFE program to require that, if an automaker manufactures an EV, EPA must include in the calculation of average fuel economy the equivalent petroleum-based fuel economy values determined by DOE for various classes of

[12] The Energy Policy and Conservation Act of 1975 (EPCA; P.L. 94-163), as amended.

[13] Generation efficiency "relates to the conversion of the limited resources into electricity, e.g., by combustion, heating a boiler, and turning a turbine"; see 89 *Federal Register* 22045.

[14] 49 U.S.C. Chapter 329.

[15] 49 U.S.C. § 32902 and § 32904.

EVs.[16] These values are incorporated into the automaker's sales-weighted fuel economy for its MY fleet of vehicles for compliance purposes. DOE must review these calculations each year and propose necessary revisions based on the following factors:

1. The approximate electrical energy efficiency of the vehicle, considering the kind of vehicle and the mission and weight of the vehicle.
2. The national average electrical generation efficiency and national average electrical transmission efficiency.
3. 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.
4. The specific patterns of use of EVs compared to petroleum-fueled vehicles.[17]

The PEF, as determined by DOE, is used to convert the measured electrical energy consumption of an EV into a gasoline-equivalent fuel economy. For BEVs, the PEF applies to all measured electrical energy consumption. For PHEVs, the PEF only applies to the measured electrical energy consumption and does not apply to the measured petroleum energy consumption.[18]

DOE's 2000 PEF Standard

In 2000, DOE published a final rule with procedures for calculating the petroleum-equivalent fuel economy of EVs.[19] The calculation procedure (see **Equation 1**) converts the measured electrical energy consumption of an EV into a gasoline-equivalent fuel economy value (E_G), and then multiplies this value by the FCF (see **Text Box**) of 1/0.15 (effectively 6.67) to arrive at a final petroleum-equivalent fuel economy value. Two additional factors are present in the equation—an accessory factor (AF) and driving pattern factor (DPF)—but these usually are considered to have a value of one, which would not influence the value of the PEF.

Equation 1:

$$PEF = E_G * FCF * AF * DPF$$

To determine the gasoline-equivalent fuel economy value (E_G) in **Equation 1**, the product of the U.S. average fossil-fuel electricity generation efficiency (T_g), the U.S. average electricity transmission efficiency (T_t), and a conversion factor (C) is divided by the petroleum refining and distribution efficiency (T_p) (see **Equation 2**). Thus, E_G accounts for expressing the relative energy efficiency of the full energy cycles of gasoline and electricity.

Equation 2:

$$E_G = \frac{T_g * T_t * C}{T_p}$$

In the 2000 rule, DOE determined an E_G of 12,307 watt-hours per gallon (Wh/gal), which accounted for the efficiencies of fossil-fuel electric generation ($T_g = 0.328$), electric transmission ($T_t = 0.924$), and petroleum refining and distribution ($T_p = 0.830$) at the time of the rulemaking, and a standard conversion factor of electric energy to gallon of gasoline (C = 33,705 Wh/gal).

[16] 49 U.S.C. §32904(a)(1).

[17] 49 U.S.C. §32904(a)(2)(B).

[18] For PHEVs, fuel economy accounts for the percentage utilization for petroleum and electricity.

[19] DOE, EERE, "Electric and Hybrid Vehicle Research, Development, and Demonstration Program; Petroleum-Equivalent Fuel Economy Calculation," 65 *Federal Register* 36986, June 12, 2000.

Fuel Content Factor (FCF)

Under the CAFE program, Congress requires NHTSA to include the FCF in calculating the fuel economy of liquid and gaseous alternative-fueled vehicles as an incentive for manufacturers to design engines to conserve petroleum. The FCF is understood to be a measure of the relative content of petroleum within an alternative fuel. Per EPCA, a gallon of a liquid or gaseous alternative fuel used to operate alternative-fueled vehicle is deemed to contain 0.15 gallon of "petroleum" fuel.[20] The FCF for liquid and gaseous alternative-fueled vehicles is unaffected by DOE's 2000 and 2024 rules.

The FCF is not required by statute to be used in calculating the fuel economy of EVs. However, in DOE's 1999 proposed rule, the agency included the FCF in its PEF calculation for EVs and identified the following rationale for such an approach:

- The FCF is consistent with existing regulatory and statutory procedures for other types of alternative-fueled vehicles,
- It provides a similar treatment to manufacturers of all types of alternative-fueled vehicles, and
- It is a simple and straightforward approach, compared to other approaches considered.[21]

Further, in the 2000 final rule, DOE suggested that the FCF, in part, accounts for the consideration of "the relative scarcity and value to the United States of all fuel used to generate electricity."[22]

DOE's 2024 PEF Standard

DOE's 2024 rule grants a 2021 petition for rulemaking submitted to the agency from the Natural Resources Defense Council and the Sierra Club.[23] The petitioners asserted that the data underlying the previous regulation were outdated, resulting in higher imputed values of fuel economy for EVs. They argued that a higher imputed value for EVs—to which the FCF contributed—distorted a manufacturer's calculation of its average fleetwide fuel economy. This enabled a situation where fewer efficiency improvements would be required for the remainder of the manufacturer's fleet (i.e., petroleum-fueled vehicles) to meet compliance with CAFE standards.

DOE's final rule modifies the methodology for calculating the PEF by

1. Updating the electric generation mix projection to account for changes in technologies and policies.
2. Changing from E_G to a cumulative gasoline-equivalent fuel economy value (CE_G), which is determined by multiplying E_G by the corresponding annual share of lifetime vehicle miles traveled based on the survivability-weighted lifetime mileage schedule derived by NHTSA.[24] The 2024 rule set the CE_G at 28,996

[20] 49 U.S.C. §32905(a).

[21] DOE, EERE, "Electric and Hybrid Vehicle Research, Development, and Demonstration Program; Petroleum-Equivalent Fuel Economy Calculation," 64 *Federal Register* 37905, July 14, 1999.

[22] DOE, EERE, "Electric and Hybrid Vehicle Research, Development, and Demonstration Program; Petroleum-Equivalent Fuel Economy Calculation," 65 *Federal Register* 36986, June 12, 2000, p. 21535.

[23] DOE, EERE, "Petroleum Equivalence Factor, Notification of Petition for Rulemaking," 86 *Federal Register* 73992, December 29, 2021.

[24] The survivability-weighted lifetime mileage schedule is derived from NHTSA's CAFE rulemaking to account for the length of time that vehicles remain in the on-road fleet and how many miles are driven by new and used vehicles of different ages. For more information, see DOT, NHTSA, "Chapter 4: Consumer Response to Manufacturer Compliance Strategies," *Draft Technical Support Document: Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks for Model Years 2027 and Beyond and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans for Model Years 2030 and Beyond*, July 2023, p. 4-5, https://www.nhtsa.gov/sites/nhtsa.gov/files/2023-08/CAFE-2027-2032-HDPUV-2030-2035-Draft-TSD-tag.pdf.

Wh/gal—which also accounted for increased U.S. average electricity generation efficiency (T_g), which now includes metrics for nuclear and renewable energy generation; increased T_t; reduced T_p; and a forward-looking electric generation mix.

3. Phasing out the use of the FCF between MY2027 and MY2030.
4. Setting values for AF and DPF equal to 1.00.

Table 1 presents DOE's revised PEF values.

Table 1. PEF Values for MY2024-MY2030 EVs

Model Year	CE_G	FCF	AF	DPF	PEF
2024-2026	12,307[a]	$\frac{1}{0.15}$	1.0[b]	1.0	82,049
2027	28,996	$\frac{1}{0.3625}$	1.0	1.0	79,989
2028	28,996	$\frac{1}{0.575}$	1.0	1.0	50,427
2029	28,996	$\frac{1}{0.7875}$	1.0	1.0	36,820
2030+	28,996	1.0	1.0	1.0	28,996

Source: Table 7 of DOE, Office of Energy Efficiency and Renewable Energy, "Petroleum-Equivalent Fuel Economy Calculation," 89 *Federal Register* 22053, March 29, 2024.

Notes: "CE_G" is cumulative gasoline-equivalent fuel economy value; "FCF" is fuel content factor; "AF" is accessory factor, "DPF" is driving pattern factor; "PEF" is petroleum equivalency factor. Values in last column may not be the product of the other columns due to rounding.

a. 12,307 Wh/gal is the E_G, not the CE_G.

b. Assumes no petroleum-powered accessories for MY2024-MY2026 EVs.

In the proposed version of the 2024 final rule, DOE would have eliminated the FCF altogether, beginning in MY2027.[25] In the 2024 final rule, while DOE concludes that "removing the fuel content factor will, over the long term, further the statutory goals of conserving all forms of energy while considering the relative scarcity and value to the United States of all fuels used to generate electricity,"[26] the agency also states:

> [W]hile the recently adopted IIJA and IRA are in effect, the critical incentives and support for EVs and charging infrastructure that these laws provide are in the early stages of implementation and will become more fully operative and effective over time. DOE agrees with commenters that there is still an opportunity to incentivize additional EV production, and the resulting greater petroleum conservation, through a fuel content factor over the next several years.[27]

Thus, DOE retains the current FCF through MY 2026, under a revised statutory basis, and gradually phases it out between MY2027 and MY2030.

[25] DOE, EERE, "Petroleum-Equivalent Fuel Economy Calculation," 88 *Federal Register* 21525, April 11, 2023.

[26] 89 *Federal Register* 22050.

[27] Ibid.

Example Compliance Calculations

Below is an example of how the PEF affects fuel economy values for EVs.

An EV rated at 28 kWh/100 mi is listed as having a 120 MPGe fuel economy based on the standard conversion factor of electric energy to gallon of gasoline of 33,705 Wh/gal. This value only considers engine efficiencies, and is the one listed on the federal government's fuel economy website and on the fuel economy labels of new automobiles. This calculation does not include the PEF.

For CAFE compliance purposes, inclusive of the PEF, the MPGe of a MY2030 EV rated at 28 kWh/100 mi would be calculated as follows under DOE's 2024 rule:

$$\frac{100 \text{ mi}}{28 \text{ kWh}} * \frac{1 \text{ kWh}}{1000 \text{ Wh}} * \frac{28{,}996 \text{ Wh}}{1 \text{ gal}} = 104 \text{ MPGe}$$

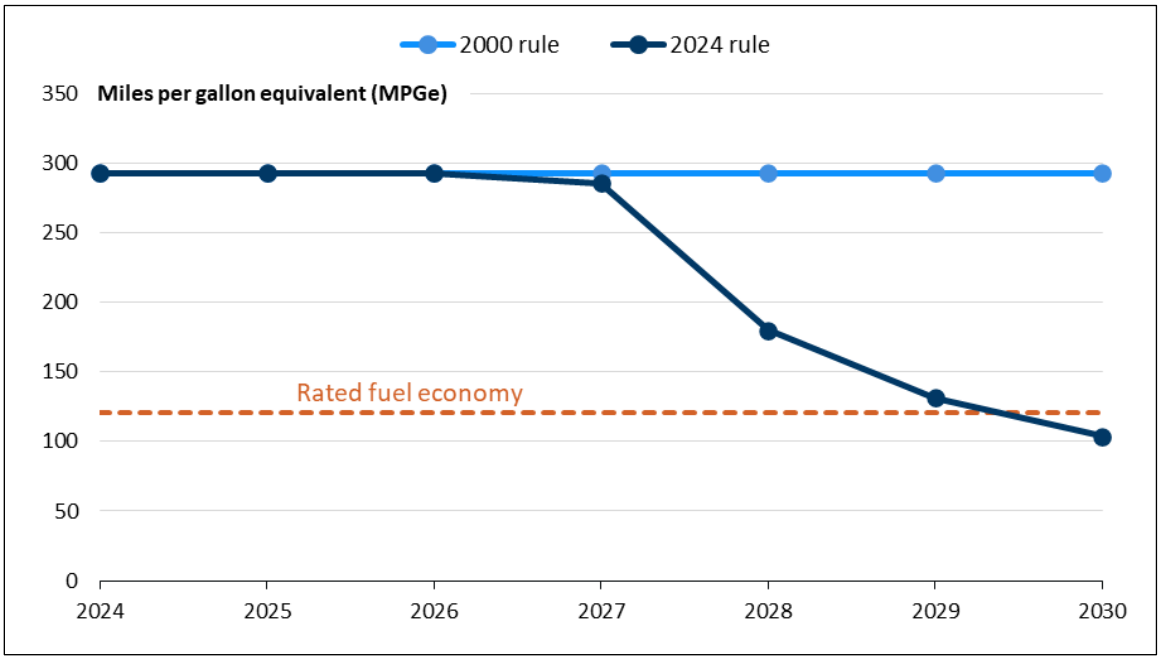
A MY2024 EV rated at 28 kWh/100 mi would be calculated as follows under DOE's 2000 rule:

$$\frac{100 \text{ mi}}{28 \text{ kWh}} * \frac{1 \text{ kWh}}{1000 \text{ Wh}} * \frac{82{,}049 \text{ Wh}}{1 \text{ gal}} = 293 \text{ MPGe}$$

Figure 1 shows the change in PEF by MY as a result of the 2024 rule.

Figure 1. Effective Miles per Gallon Equivalent for Electric Vehicles According to Different Methods of Calculation

for an electric vehicle rated at 28 kWh/100 mile for MY2024-MY2030



Source: CRS.

Notes: The effective miles per gallon equivalent for electric vehicles for each model year is used for calculating the average fuel economy of a manufacturer's fleet for a given model year. Depicted are the effective miles per gallon equivalent under three approaches: (1) rated fuel economy assumes a standard conversion of 33,705 Wh/gal; (2) 2000 rule refers to the Department of Energy (DOE) final rule with a set (petroleum equivalency factor) PEF of 82,049; and (3) 2024 rule refers to the DOE final rule with a phase-out of the fuel content factor, which gradually decreases the PEF to 28,996 by MY2030.

Thus, the 2024 rule would cause an EV rated at 28 kWh/100 mi to have a much smaller impact on the sale-weighed fleet average for a manufacturer's CAFE compliance in MY2030 than the 2000 rule.

Potential Implications of DOE's Rule

DOE's 2024 rule raises several potential policy and legal implications which could merit further consideration.

The FCF serves as an incentive for manufacturers to include alternative-fueled vehicles in their fleet under the CAFE program. Removing the FCF from calculations assessing the CAFE fuel equivalency for EVs may disincentivize the production of EVs while continuing to incentivize the production of liquid and gaseous alternative-fueled vehicles. Congress may consider the extent to which alternative-fueled vehicles should continue to be incentivized under NHTSA's CAFE program, and whether the FCF should remain only for liquid and gaseous alternative-fueled vehicles, or if it should extend to all—or should be removed from all—alternative-fueled vehicles for consistency within the program.

The PEF is required by statute and under DOE's rule to include a consideration of upstream energy inputs for EVs. However, in determining the fuel economy rating for non-EVs under the CAFE program, no consideration is taken of upstream energy inputs for petroleum, natural gas, methanol, or biofuel vehicles. Such a consideration would likely decrease the efficiency of these vehicles. Congress may consider whether and how upstream energy inputs should be addressed under NHTSA's CAFE program, and whether they should remain solely for EVs, or if they should extend to all—or be removed from all—compliance calculations for consistency within the program.

Automakers have commented that an overly strict NHTSA rule or reduced PEF value could subject them to higher civil penalties under the CAFE program. This argument has been echoed by some Members of Congress in a letter to NHTSA.[28] Others in Congress have expressed concerns about the effect of the PEF on NHTSA's credit trading and transferring option between automotive manufacturers that are not in compliance with the CAFE standard and those manufacturers that exceed the CAFE standard.[29] Some stakeholders have refuted arguments from automakers and questioned the assumptions underlying industry's claims.[30] The effects of federal rulemaking on automakers depend upon not only the requirements of NHTSA's CAFE program, which would rely upon DOE's 2024 rule to determine the effective miles per gallon equivalent for electric vehicles, but also the separate requirements of EPA's GHG emissions standards, which were published in April 2024.[31]

[28] Letter from Mike Crapo, United States Senator, et al., to Ms. Sophie Shulman, Deputy Administrator, National Highway Traffic Safety Administration, January 23, 2024, https://www.crapo.senate.gov/imo/media/doc/nhtsacafestandards01242024.pdf.

[29] Letter from Rick Scott, United States Senator, et al., to The Honorable Gene Dodaro, Comptroller General, Government Accountability Office, May 20, 2024, https://www.rickscott.senate.gov/services/files/66086F5E-639F-4E59-955C-7266997B46E2.

[30] See, for example, Union of Concerned Scientists, "Automakers Opt Out of Cleaning Up Their Vehicles … But at What Cost?" November 9, 2023, https://blog.ucsusa.org/dave-cooke/automakers-opt-out-of-cleaning-up-their-vehiclesbut-at-what-cost/.

[31] Environmental Protection Agency, "Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles," 89 *Federal Register* 27842, April 18, 2024.

Under current rulemakings, automakers can respond to CAFE compliance requirements in a number of ways. They could increase the efficiency of internal combustion engine vehicles in

their fleet; they could change the configuration of their fleet to include more EVs; and/or they could change the configuration of their fleets to include more liquid and gaseous alternative-fueled vehicles. Other options could include carrying forward credits earned in a prior model year or buying or transferring credits from another fleet category or another automaker. Alternatively, automakers could provide NHTSA with a plan to make up the difference in the next three years (carry back credits) or potentially pay a civil penalty.

In April 2024, 13 states and an industry group challenged DOE's 2024 rule in the U.S. Court of Appeals for the 8th Circuit.[32] The petition argues that the agency (1) lacked statutory authority to impose a fuel-content factor on EVs; (2) lacked authority to apply its revised calculation starting in MY2027 because Congress requires an annual review of the PEF; (3) failed to perform an environmental impact statement under the National Environmental Policy Act; and (4) violated the Administrative Procedure Act because the rule is "arbitrary and capricious."

DOE's 2024 rule highlights the challenges involved in comparing motor vehicles powered by different sources of energy and how underlying assumptions in the calculations can lead to economic impacts. These challenges may arise in other policy determinations in the transportation sector.

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[32] Petition for Review, Iowa v. Granholm, No. 24-1721 (8th Cir. Apr. 5, 2024).