Alliance for Automotive Innovation

Comments on Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards

EPA-HQ-OAR-2025-0194

September 22, 2025

Alliance for Automotive Innovation ("Auto Innovators") submits these comments in response to the U.S. Environmental Protection Agency ("EPA") proposed rule "Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards"[1] (the "Proposed Rule"). We appreciate the opportunity to comment on the Proposed Rule.

Auto Innovators represents the full auto industry, including the manufacturers producing most vehicles sold in the U.S., equipment suppliers, battery producers, semiconductor makers, technology companies, and autonomous vehicle developers. Our mission is to work with policymakers to realize a cleaner, safer, and smarter transportation future and to ensure a healthy and competitive auto industry that supports U.S. economic and national security. Representing over 5 percent of the country's GDP, responsible for supporting nearly 11 million jobs, and driving $1.5 trillion in annual economic activity, the automotive industry is the nation's largest manufacturing sector.

Auto Innovators' member companies are focused on ensuring the health and competitiveness of the auto industry in the U.S. In furtherance of this goal, the association has long promoted a stable regulatory environment coordinated across the whole of government and reasonable, achievable standards that preserve consumer choice and support innovation. In addition, the association has supported continued progress in emissions reductions and improved fuel economy. We've also supported standards that capture the benefits of advanced, lower-carbon liquid fuels, especially for the gasoline-powered legacy vehicles that will remain in operation for years to come.

Automakers have taken significant actions to reduce new vehicle greenhouse gas ("GHG") emissions. In model year ("MY") 2023, the average new light-duty vehicle emitted 18% lower tailpipe GHG emissions per mile than it did in MY 2012.[2] Additional improvements in off-cycle

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[1] U.S. Environmental Protection Agency, Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards, 90 *Fed. Reg.* 36288 (Aug. 1, 2025) (hereinafter "NPRM").

[2] U.S. Environmental Protection Agency, *The 2024 EPA Automotive Trends Report*, EPA-420-R-022 (Nov. 2024) (hereinafter "EPA Trends Report") at 122, Table 5.6. Calculation of 2-Cycle Tailpipe and Performance percentage improvements from model year 2012 to 2023 by Auto Innovators.

and air conditioning-related emissions have resulted in a net improvement of 25%.[3] The real-world carbon dioxide (CO_2) emission rate from new light-duty vehicles sold in the U.S. has declined from 399 g/mile in MY 2011 to a projected 305 g/mile in MY 2024.[4] Since 2004, total light-duty vehicle GHG emissions, inclusive of all vehicles in use, have declined in the U.S.[5]

To date, Auto Innovators has advocated for the EPA to revise the existing MY 2027-2032 light- and medium-duty vehicle GHG standards. The 2027 and later standards are simply not achievable in light of significant market, charging infrastructure, supply chain, affordability, and other challenges as well as recent policy changes enacted since they were finalized. Additionally, standards from preceding model years are creating significant near-term compliance challenges for many automakers. We describe these challenges and the justification for revised standards in Appendix I.

Rather than revise the standards, however, the Proposed Rule considers rescinding all motor vehicle GHG emission standards, either through a rescission of the 2009 GHG endangerment finding ("Endangerment Finding")[6] or separately under various legal and policy rationales. We understand that by eliminating the standards, this proposed approach would resolve concerns with the feasibility of MY 2027 and later GHG standards and would result in a single federal program for the regulation of GHG emissions and fuel economy under the statutorily-mandated Corporate Average Fuel Economy ("CAFE") program. However, as explained below, the GHG standards set in the Multi-Pollutant Rule[7] still need to be revised to feasible levels to provide certainty for the industry.

Automakers and suppliers in the U.S. are increasingly being forced to navigate rapid and dramatic swings in vehicle emissions policy from one administration to another administration. Since years-long design, development, and production cadences necessitate investments in technology and production capacity years in advance, each such change puts billions of dollars of capital investment at risk. The Proposed Rule represents yet another significant change in

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[3] *Ibid.*

[4] *Id.* at 14, Table 2.1. Calculation of Real-World CO2 percentage improvement from MY 2011 to projected MY 2024 by Auto Innovators.

[5] U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2022* (2024), EPA 430-R-24-004 at 2-38, Figure 2-15.

[6] U.S. Environmental Protection Agency, Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act; Final rule, 74 Fed. Reg. 66496 (Dec. 15, 2009).

[7] U.S. Environmental Protection Agency, Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards: Final Rule, 86 *Fed. Reg.*74434 (Dec. 30, 2021). (Hereinafter "MY 2023-2026 LDV GHG Rule.")

approach that the industry will have to navigate. The approach also has the potential to further amplify the severity of policy swings in future administrations.

To help address this reality, we strongly urge EPA to: (a) document in the record why the present standards are not appropriate; and (b) develop and implement revised GHG standards as an alternative or backstop to the Proposed Rule. Such a contingency plan will be critical if motor vehicle GHG standards are retained or reinstated in some way. Revised standards could be issued through an interim final rule or other rulemaking instrument pending a final action on the Proposed Rule. EPA should consider a rule that maintains the standard from a recent model year until such time that a full notice and comment rulemaking could be conducted to replace the standards with ones that produce reasonable and achievable reductions in GHG emissions and that can be reasonably achieved by manufacturers offering a broad range of vehicle powertrain technologies, including internal combustion engine vehicles. As EPA evaluates how to proceed, we believe the concerns we raise in Appendix I should be addressed in a manner that is legally durable and that can provide near-term certainty.

EPA raises a number of legal issues that could have implications beyond EPA's proposed actions. We take the following positions and address them in greater depth in Appendix II. First, EPA's proposed actions would not in and of themselves impact preemption of state GHG emission standards and fuel economy standards under the Clean Air Act and the Energy Policy & Conservation Act ("EPCA"), respectively. We agree that emission standards must be tied to an endangerment finding unless otherwise explicitly required by statute. We support the consideration of policy issues when EPA sets standards. We believe the term "requisite technology" refers to the technology required to meet the specific motor vehicle and engine emission standards set by EPA that are at issue, not that a technology must be able to fully address the specific issues identified in an endangerment finding. Finally, we believe the Major Questions Doctrine may be a consideration when EPA sets standards, particularly if such standards would effectively result in a significant limitation on the products available for customers to purchase.

EPA requests comment on proposed regulatory text to implement a rescission of motor vehicle GHG standards. Notwithstanding our view on the importance of revised standards, there are several issues that should be addressed if EPA finalizes a rescission of the standards. We provide comments on specific regulatory provisions in Appendix III.

If GHG emission standards are retained or reinstated, we recommend that EPA address other issues related to GHG certification and compliance. These include clarifying that a GHG deficit from a given model year may be carried forward for up to three years without regard to prior or subsequent deficits (consistent with the Department of Transportation's CAFE program); clarifying that manufacturers may revise model year reports to apply different credits to a deficit than those originally applied; allowing GHG compliance tests to be conducted on E0 fuel while EPA develops and finalizes E10 test procedures for CAFE; reconsidering the MY 2031 and later changes to plug-in hybrid utility factors; and establishing a reasonable enforcement policy coordinated with the CAFE program. For small volume manufacturers, EPA should reinstate,

for MY 2027 and later, alternative GHG targets consistent with the GHG improvement required of large volume manufacturers. Auto Innovators also supports the continuation of the off-cycle and air conditioning credit programs and EPA's consideration of removing GHG and criteria emission credit expiration. The maintenance and expansion of these programs would provide much-needed certainty and flexibility to manufacturers in their compliance planning. Additionally, we recommend that EPA make certain technical clarifications and corrections in the regulatory text related to motor vehicle GHG emission certification, compliance, and testing as described in Appendix IV.

As a separate, but related matter to the need for revised standards, compliance with EPA's "Tier 4" light- and medium-duty vehicle criteria emission standards is similarly unachievable without significant increases in EV market share, while at the same time adding hundreds of dollars of additional costs to all internal combustion engine vehicles. Several changes should be made to these regulations to produce a more appropriate, cost-effective criteria emission standard.

As a final matter, there are clarifications and technical corrections related to other emission and fuel economy test procedures that we recommend EPA address regardless of EPA's final action on the Proposed Rule. These are described in Appendix V.

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Appendix I: The Need to Revise GHG Standards

Under the Biden Administration, EPA increased the stringency of model year ("MY") 2023-2026 light-duty vehicle greenhouse gas ("GHG") standards[8] and established stringent new light-duty vehicle ("LDV") and medium-duty vehicle ("MDV") GHG emission standards for MYs 2027 and later.[9] These standards have created significant compliance challenges for many automakers and are no longer achievable in the timeframe provided given recent market trends and policy changes.

MY 2023-2026 Light-Duty Vehicle GHG Compliance Challenges

In 2021, EPA revised light-duty vehicle GHG emission standards for MYs 2023-2026, increasing the required pace of GHG emission improvements to unprecedented levels in each of the four model years. Prior to these standards, the maximum rate of improvement required in any model year was about 4.4%.[10] The standards set by EPA in 2021 required improvements of 10% in model year 2023, followed by 5% in MY 2024, 6.6% in MY 2025, and culminated with an additional 10% stringency increase in MY 2026.[11]

The required annual improvement rates far exceed those previously achieved by automakers. The historical rate of improvement in GHG performance for all automakers on average, between 2013 and 2023, was 2.5% per year, including increased application of air conditioning, off-cycle, and advanced technology credits.[12] Tailpipe GHG emissions alone improved at an average rate of 1.6% per year.[13]

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[8] U.S. Environmental Protection Agency, Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards: Final Rule, 86 *Fed. Reg.*74434 (Dec. 30, 2021). (Hereinafter "MY 2023-2026 LDV GHG Rule.")

[9] Multi-Pollutant Rule *supra* note 7.

[10] Estimate by Auto Innovators using footprint target coefficients from 40 CFR 86.1818-12 and assuming an average passenger car footprint of 47.7 ft2, average light truck footprint of 54.2 ft2, and a passenger car / light truck sales mix of 40%/60%.

[11] MY 2023-2026 LDV GHG Rule (*supra* note 8) at 74438.

[12] EPA Trends Report (*supra* note 2) at 122, Table 5.6 Industry Performance by Model Year, All (g/mi). Calculation of compound average rate of improvement of "Performance Value" for model years 2013 to 2023 by Auto Innovators.

[13] *Ibid.* Calculation of compound average rate of improvement of "2-Cycle Tailpipe" for model years 2013 to 2023 by Auto Innovators.

Excluding manufacturers that sell only electric vehicles ("EVs")[14] (i.e., "EV-only" automakers), the contrast between the required rates of improvement in MYs 2023-2026 and historically demonstrated rates are even greater. Including air conditioning and off-cycle credits, automakers with ICE vehicle sales improved GHG performance at an average rate of 1.9% per year.[15] Tailpipe GHG emissions improved at an average rate of 0.8% per year between 2013 and 2023.[16]

Whether with or without additional credits, the industry-demonstrated practical rates of GHG improvement are far below what EPA required for MYs 2023-2026, calling into question whether those standards provide the period "necessary to permit the development and application of the requisite technology."[17]

As shown in Figure 1, automakers excluding EV-only manufacturers and small volume manufacturers with alternative standards ("Full Line Automakers") have trailed annual GHG standards since 2016. The blue line shows Full Line Automakers' average GHG performance. The orange line indicates Full Line Automaker's average GHG standard. When the performance is higher than the standard, Full Line Automakers are on average worse than target. In these years, manufacturers have generally relied on previously banked and purchased credits to remain compliant, with a few occasionally carrying forward deficits to be resolved later.

[14] We use the terms "electric vehicles" or "EVs" as generally inclusive of battery electric vehicles and plug-in hybrid electric vehicles. Some data sets herein may also include fuel cell electric vehicles, which are only a very small portion of total electric vehicles sales or market share.

[15] U.S. Environmental Protection Agency, Explore the Automotive Trends Data, https://www.epa.gov/automotive-trends/explore-automotive-trends-data (Mar. 27, 2025), *Explore Trends Detailed Data* (hereinafter "EPA Trends Data") at Table F. Calculation of compound average rate of improvement of production and lifetime mileage weighted fleet performance for automakers excluding BYD, BYD Motors, Coda, Fisker, Karma, Karma Automotive LLC, Lucid, Rivian, Rivian Automotive LLC, and Tesla by Auto Innovators.

[16] *Ibid.* Calculation of compound average rate of improvement of production and lifetime mileage weighted "Fleet Average (g/mi)" for automakers excluding BYD, BYD Motors, Coda, Fisker, Karma, Karma Automotive LLC, Lucid, Rivian, Rivian Automotive LLC, and Tesla by Auto Innovators.

[17] *See* 42 U.S.C. § 7521(a)(2).

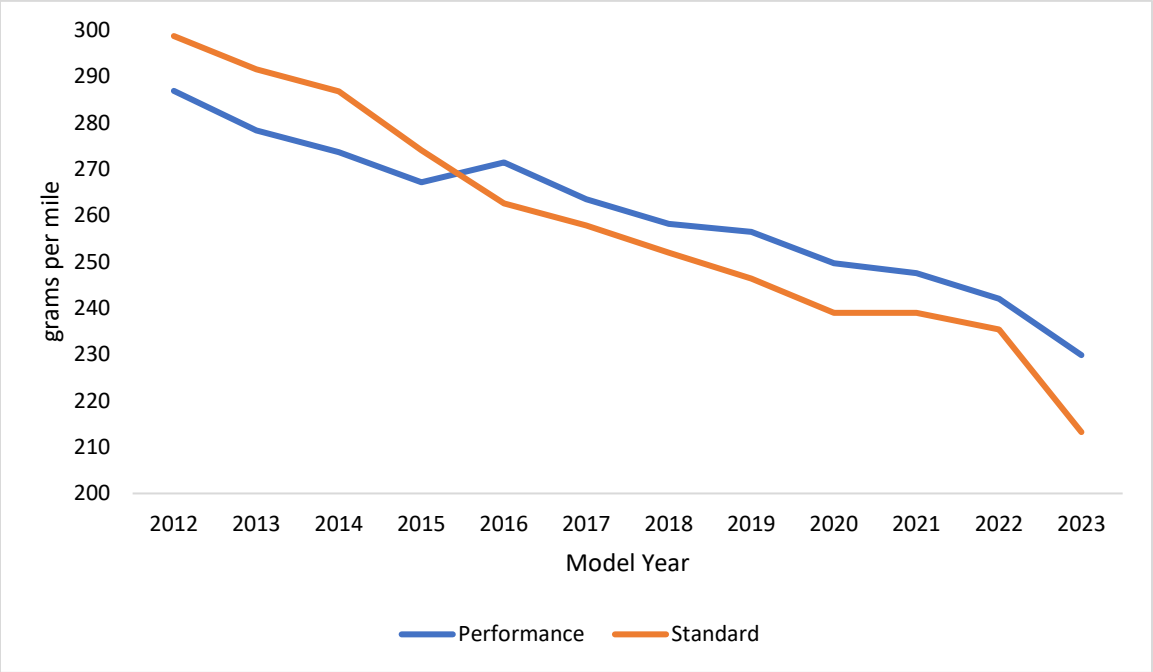

Figure 1: GHG performance vs. standard by model year (average of Full Line Automakers)[18]

In MY 2023, the first year of the standards that were revised in 2021, 15 of 23 automakers generated deficits, failing to meet the standard in the year.[19] Of the eight manufacturers that generated credits (meeting the standard in the year) four were manufacturers that only built EVs and two were small volume manufacturers with alternative standards. In other words, only two of the 16 manufacturers that build internal combustion engine ("ICE") vehicles and that are subject to the primary standards produced fleets compliant with the MY 2023 standard. Most relied on previously banked credits or credits purchased from EV-only automakers to demonstrate compliance while three carried their deficit forward to be resolved in a later model year.[20]

Starting in 2016, Full Line Automakers in aggregate have incurred GHG deficits in each model year (Figure 2). In MY 2023, nearly 50 million metric tons ("MMT") of deficits were incurred

[18] EPA Trends Data (*supra* note 15) at Table F. Calculation of production and lifetime travel weighted average performance and standards for automakers excluding BYD, BYD Motors, Coda, Fisker, Karma, Karma Automotive LLC, Lucid, Rivian, Rivian Automotive LLC, and Tesla by Auto Innovators.

[19] EPA Trends Report (*supra* note 2) at 130, Table 5.11.

[20] *Id.* at 143, Figure 5.14.

by Full Line Automakers,[21] exceeding the 37 MMT of credits generated by EV-only automakers.[22]

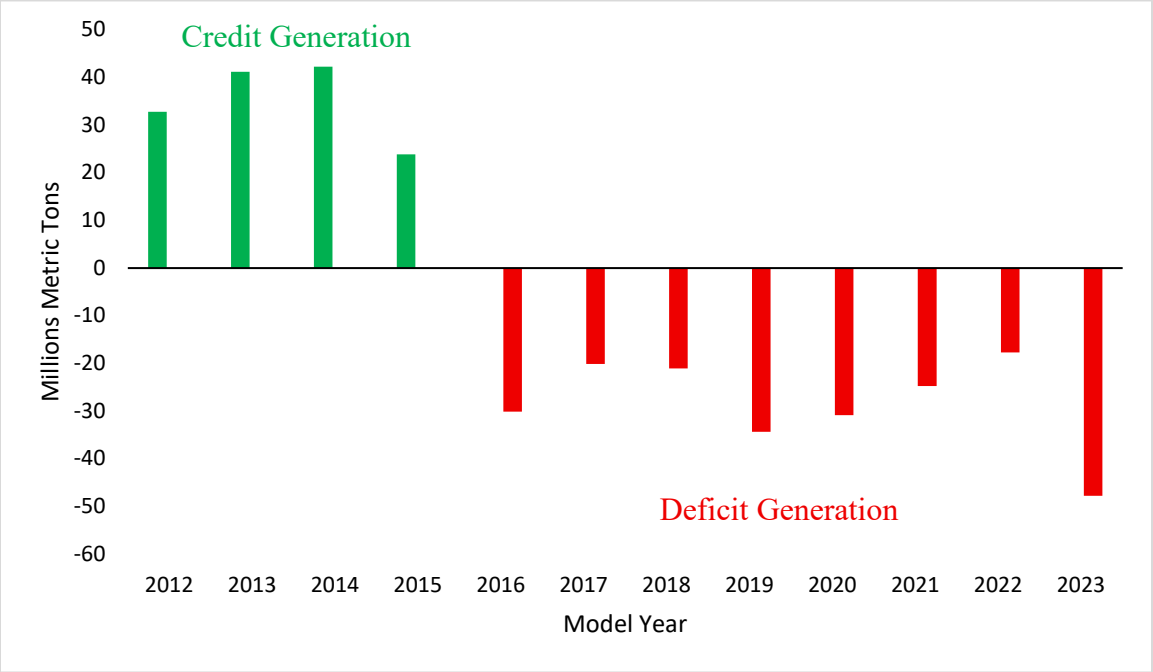

Figure 2: GHG credit / (deficit) generation by model year (Full Line Automakers)

Although such deficits may be offset with previously banked and/or purchased credits, there are signs that credit trading may not provide the same degree of flexibility that it once did. Over 25% of the currently banked credits are owned by a single Full Line Automaker, and another 50% by four others.[23] EV-only automakers have already sold most of the 37 MMT of credit they generated in 2023, leaving only 3.2 MMT of credit in their collective banks. Three manufacturers carried deficits forward after MY 2023.[24] After reaching a high of 345 MMT

[21] EPA Trends Data (*supra* note 15) at Table F. Sum of "Total Credits (Mg)" without BYD, BYD Motors, Coda, Fisker, Karma, Karma Automotive LLC, Lucid, Rivian, Rivian Automotive LLC, and Tesla by Auto Innovators.

[22] *Ibid.* Sum of "Total Credits (Mg)" generated by BYD, BYD Motors, Coda, Fisker, Karma, Karma Automotive LLC, Lucid, Rivian, Rivian Automotive LLC, and Tesla by Auto Innovators.

[23] *Id.* at Table I. Compliance Data: Manufacturer Credit Balances as of October 2024. Calculations by Auto Innovators based on "Final 2023 Credit Balance."

[24] EPA Trends Report (*supra* note 2) at 143, Figure 5.14. Manufacturer Credit Balance After Model Year 2023.

banked credits in 2014, the aggregate bank of credits has dropped every year, reaching a record low in 2023 at 123 MMT.[25]

It is clear that recent light-duty vehicle GHG standards have outpaced Full Line Automakers' efforts to reduce GHG emissions and that the MY 2023-2026 standards have created imminent compliance challenges and are likely to continue to do so.

If GHG standards are retained or reinstated, these issues will need to be addressed.

Need for Revision of MY 2027-2032 GHG Standards

In 2024, EPA finalized light- and medium-duty vehicle GHG standards for MYs 2027-2032 in its "Multi-Pollutant Rule."[26] The rule was premised on rapid growth in the U.S. market for electric vehicles, supported in part by government investments in the EV supply chain, charging infrastructure, and consumer incentives. Projections included optimistic assessments for the development of U.S. critical mineral and battery supply chains, charging infrastructure, and customer demand for EVs.

Auto Innovators commented extensively on EPA's proposal.[27] Our comments warned that compliance predicated on a stacking of best-case scenarios related to market factors beyond the control of OEMs was unrealistic and did not meet the criteria under Clean Air Act § 202(a).

Following changes made between the proposal and final rule, we stated the GHG standards were "on the ragged edge of achievable…if everything…goes just right."[28]

However, everything did not go "just right." Growth in consumer demand for EVs has stalled, and changes in government policy are expected to further depress EV market potential. The 2027 and subsequent model year GHG standards are no longer feasible. We therefore recommend that they be revised in order to address these fundamental feasibility issues and to ensure that reasonable, achievable rules are in place if GHG emission standards are retained or reinstated.

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[25] *Id.* at 147, Figure 5.15.

[26] *Supra* note 7.

[27] *See* Regulations.gov, Docket ID EPA-HQ-OAR-2022-0829-0701. Comments incorporated by reference and attached.

[28] Bozzella, J., "EPA's Final EV Plan: The Ragged Edge of Achievable?" Alliance for Automotive Innovation (Mar. 20, 2024). Available at https://www.autosinnovate.org/posts/blog/ragged-edge-of-achievable. (Accessed Sep. 12, 2025.)

Below, we review the foundation upon which the EPA built its Multi-Pollutant Rule, what has changed over the last year to dramatically erode that foundation, and the projected impact of those changes.

Compliance With the Multi-Pollutant Rule Is Based on Rapid Growth of the U.S. EV Market

The Multi-Pollutant Rule claimed to set performance-based GHG standards that do not require any specific technology to meet the standards. This is akin to a requirement to travel from Los Angeles to Boston in 18 hours and claiming it is a performance-based requirement that does not require any specific travel mode, like flying. There's simply no way to get from Los Angeles to Boston in 18 hours without jets for a substantial part of the trip. Likewise, there's no way to meet the GHG standards without EVs for a substantial part of the new vehicle fleet.

In fact, every GHG compliance pathway modeled by EPA as enabling compliance with the MY 2027-2032 LDV standards requires EVs to surpass 50% market share no later than 2030.[29] Figure 3 shows the EV penetration rates for the three GHG compliance pathways presented in the Multi-Pollutant Rule along with the actual EV market share in the first half of 2025. The 9.6 percent market share of EVs in the first half of 2025[30] would need to triple in about a year to reach any of these pathways and then continue to substantially increase. Note that Pathway A is the central case used to support the feasibility of the LDV GHG standards.

[29] Multi-Pollutant Rule (*supra* note 7) at 27856, Table 3.

[30] Compiled by Alliance for Automotive Innovation with new registrations for retail and fleet data provided by S&P Global Mobility covering January 1, 2024 – June 30, 2024 and January 1, 2025 – June 30, 2025.

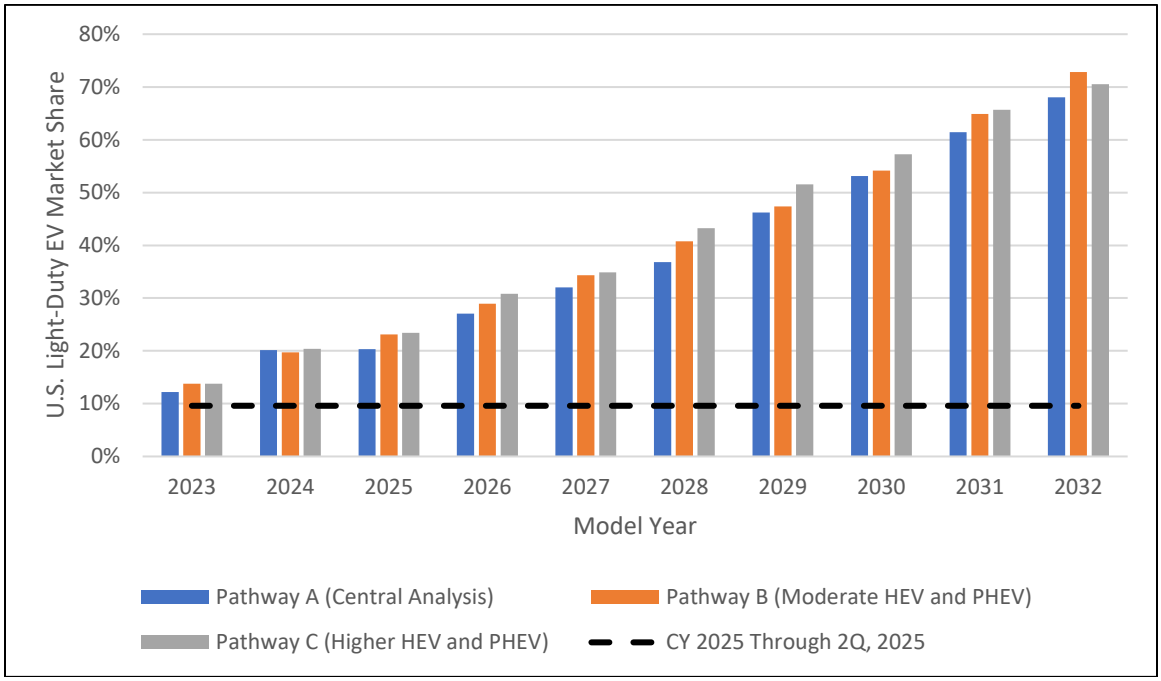

Figure 3: EPA-projected U.S. light-duty vehicle EV market share for compliance with MY 2023-2032 standards and calendar year 2025 EV market share through 1H 2025.[31,32,33]

U.S. Light-Duty EV Market Growth Is Flattening

In contrast to the rapid growth in EV market share projected by EPA, EV market growth generally flattened from mid-2023 to mid-2025 (Figure 4). Nearly 761,000 EVs were sold in the first half of 2025, 9.6 percent of all light vehicle sales and a decreased market share of 0.1 percentage points from the first half of 2024.[34] The uptick in sales in August 2025 is likely related to customers pulling ahead EV purchase plans in advance of the end of IRS 30D and

[31] Multi-Pollutant Rule (*supra* note 7) at 27856, Table 3.

[32] Model year 2023-2026 EPA projections calculated by Auto Innovators from U.S. Environmental Protection Agency, Optimization Model for reducing Emissions of Greenhouse Gases from Automobiles, OMEGA 2.5.0 Downloadable Materials, Light-duty central case (March 2024) (zip), Light-duty lower BEV production sensitivity (March 2024) (zip), Light-duty no additional BEVs beyond no-action sensitivity (March 2024) (zip). Available at https://www.epa.gov/regulations-emissions-vehicles-and-engines/optimization-model-reducing-emissions-greenhouse-gases. (Accessed Sep. 12, 2025.)

[33] 1H, 2025 EV market share compiled by Alliance for Automotive Innovation with new registrations for retail and fleet data provided by S&P Global Mobility covering January 1, 2024 – June 30, 2024 and January 1, 2025 – June 30, 2025.

[34] Figures compiled by Alliance for Automotive Innovation with new registrations for retail and fleet data provided by S&P Global Mobility covering January 1, 2024 – June 30, 2024 and January 1, 2025 – June 30, 2025.

45W incentives after September 2025. Even so, August market share of EVs was only 11.5 percent.

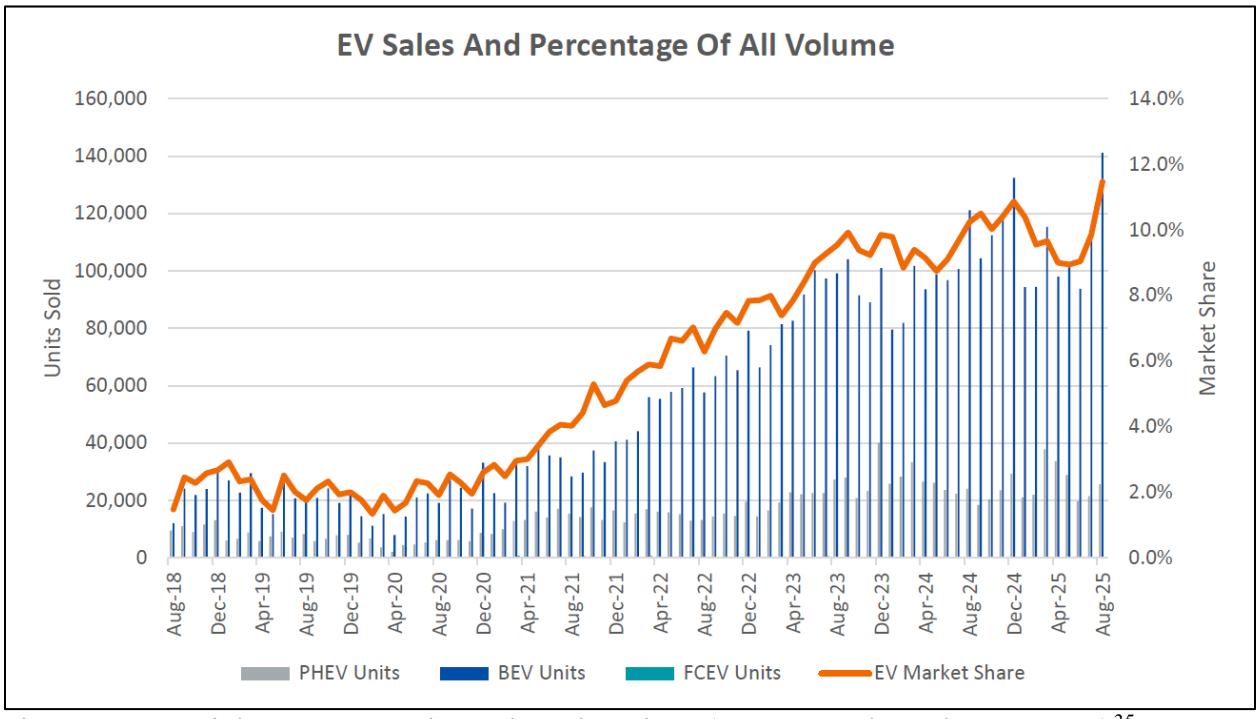

Figure 4: U.S. Light-Duty EV Sales and Market Share (Aug. 2018 through Aug. 2025)[35]

Auto Innovators sees no feasible pathway to meet the MY 2027-2032 EPA-projected LDV EV market share without major market disruptions given current U.S. market conditions and policies.

EPA Did Not Demonstrate an Alternative ICE-Based Pathway for Compliance with the GHG Standards Set in the Multi-Pollutant Rule

Our assessment is that there is no ICE-based pathway to meeting the MY 2027-2032 standards. In the early years of the program, there is insufficient time to deploy sufficient strong hybridization to meet the standards without significant increases in EV market share. In the latter years of the program, the only vehicles likely to comply with the standards are EVs, which would have to be used to balance out the emissions of remaining ICE vehicles. An analysis from S&P Global that assessed MY 2024 vehicles against future standards found that by 2030 the only MY 2024 vehicles that meet the future standards are EVs (Figure 5). Even conventional strong

[35] Alliance for Automotive Innovation, *Reading the Meter* (Sep. 5, 2025) at 8. Available at https://www.autosinnovate.org/posts/papers-reports/reading-the-meter-state-of-industry-2025-09-05. (Accessed Sep. 12, 2025.)

hybrid electric vehicles would generally not meet their MY 2030 and later targets, requiring EVs to offset them for compliance.

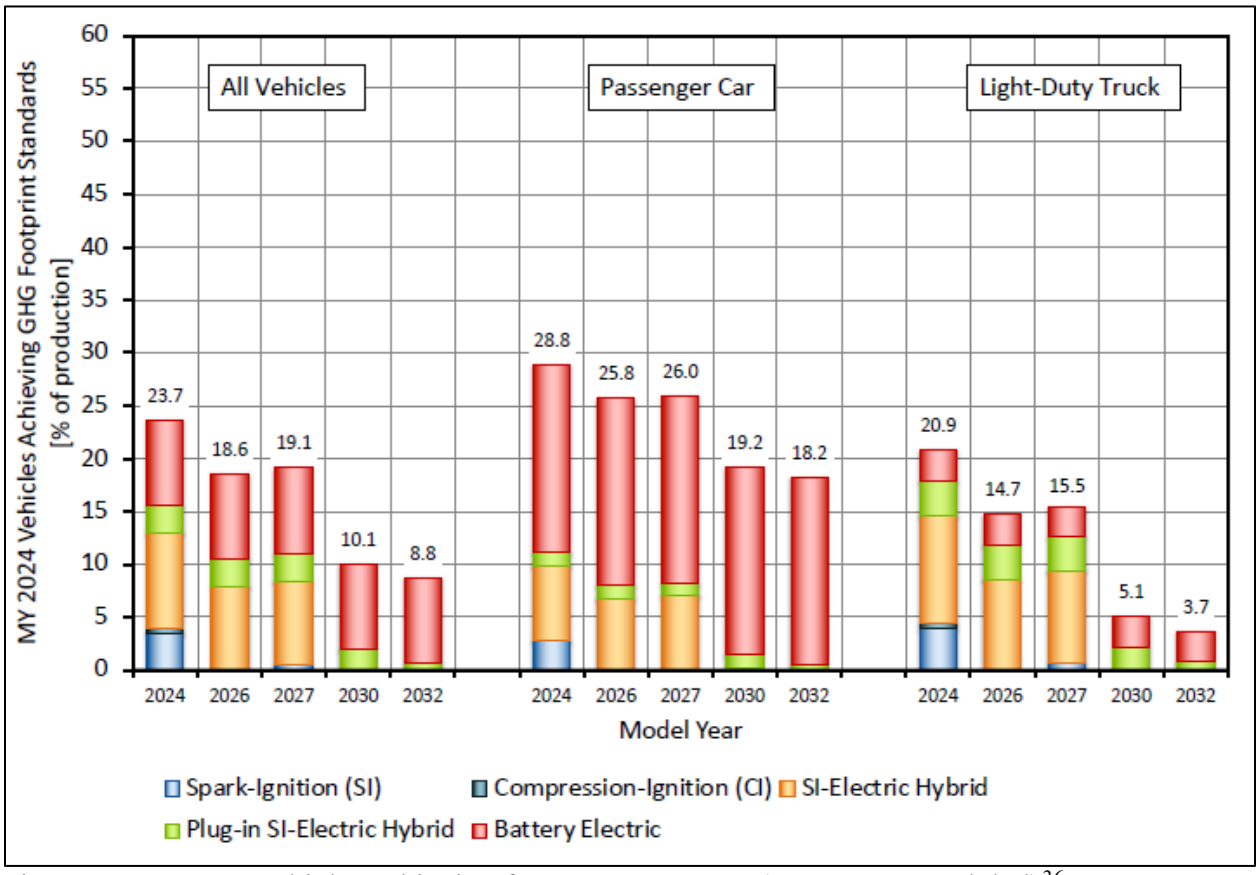

Figure 5: MY 2024 vehicles achieving future GHG targets (Source: S&P Global)[36]

The One Big Beautiful Bill Act Invalidates Estimates Used by EPA in the Multi-Pollutant Rule

In the Multi Pollutant Rule, EPA explicitly and repeatedly acknowledged that the feasibility of the GHG standards was directly tied to increased EV market share, the estimates for which, in turn, were tied to the continuation of policies in the Inflation Reduction Act of 2022 ("IRA") and

[36] S&P Global Mobility, *Model Years 2012 to 2024 Baseline Study* (Jan. 20, 2025, version 1.2) at 87. Funded by Auto Innovators. Full study incorporated by reference and attached to these comments. Includes content supplied by S&P Global Mobility; Copyright © S&P Global Mobility, 2025. All rights reserved. The S&P reports, data and information referenced herein (the "S&P Materials") are the copyrighted property of S&P and its affiliates and represent data, research, opinions or viewpoints published by S&P, and are not representations of fact. The S&P Materials speak as of the original publication date thereof and not as of the date of this document. The information and opinions expressed in the S&P Materials are subject to change without notice. While the S&P Materials reproduced herein are from sources considered reliable, the accuracy and completeness thereof are not warranted, nor are the opinions and analyses which are based upon it. S&P and S&P Global Mobility are trademarks of S&P. Other trademarks appearing in the S&P Materials are the property of S&P or their respective owners.

Infrastructure Investment and Jobs Act, otherwise known as the Bipartisan Infrastructure Law ("BIL"). Below are just a few examples from the Multi-Pollutant Rule:

> *A particular consideration with regard to the increased penetration of zero emission vehicle technology is Congress' passage of the Bipartisan Infrastructure Law (BIL) in 2021 and the Inflation Reduction Act (IRA) in 2022.* These measures represent significant Congressional support for investment in *expanding the manufacture, sale, and use of zero emission vehicles* by addressing elements critical to the advancement of clean transportation and clean electricity generation in ways that will *facilitate and accelerate the development, production and adoption of zero-emission technology during the time frame of this rule.* Congressional passage of the *BIL and IRA represent pivotal milestones* in the creation of a broad-based infrastructure instrumental to the expansion of clean transportation, including light- and medium-duty zero emission vehicles, and *we have taken these developments into account in assessing the feasibility of the standards.*[37] (*Emphasis* added.)
>
> [Plug-in electric vehicle,[38] "PEV"] purchase incentives have led to more PEV purchases, *a trend we expect will continue given the substantial additional incentives offered through the IRA.*[39] (*Emphasis* added.)
>
> The combination of economic incentives provided in the IRA and the auto manufacturers' stated plans for producing significant volumes of zero and near-zero emission vehicles in the timeframe of this rule *supports EPA's ability to finalize standards at a level of stringency greater than was feasible in past rules.*[40] (*Emphasis* added.)

In evaluating regulatory impacts, including projected technology outcomes, EPA incorporated the IRA into its baseline assumptions, scenario modeling, and economic impact assessments, including:

- Modeling the effects of IRA tax credits (*e.g.*, Sections 30D, 45X, and 45W)
- Estimating vehicle adoption rates and technology costs with IRA incentives
- Quantifying economic transfers and fuel savings enabled by IRA-driven electrification

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[37] Multi-Pollutant Rule (*supra* note 7) at 27851.

[38] Battery electric and plug-in hybrid electric vehicles.

[39] Multi-Pollutant Rule (*supra* note 7) at 28027.

[40] *Id*. at 27907.

For example, the regulatory impact analysis ("RIA") for the Multi-Pollutant Rule states:

> Federal Purchase Incentive – The maximum potential consumer purchase incentive provided via the Inflation Reduction Act is $7,500. The actual purchase incentive any given consumer might receive is based on several eligibility requirements for the consumer and the actual vehicle. We included estimates of the average consumer purchase incentives as well, consistent with the values applied within OMEGA as presented in RIA Chapter 2.6.8. *As with producer incentives, we assume consumers receive the full purchase incentive for which they are eligible.*[41] (*Emphasis* added.)

EPA's modeling overestimated the impact of IRA incentives and could not account for their later revocation in 2025. The Multi-Pollutant Rule assumed manufacturers would increasingly produce vehicles eligible for the $7,500 30D credit. However, this expectation did not account for new eligibility constraints—such as critical mineral and manufacturing content requirements—or the long lead times needed to build facilities and restructure supply chains.

Additionally, EPA identified the IRA as a key enabler of EV market growth, citing its incentives for EV purchases and domestic battery production. This assessment was overly optimistic, as many current EV models are excluded from IRA benefits, and the assessment largely overlooked the global supply chain essential to supporting the U.S. EV market. Moreover, EPA did not anticipate the termination of the IRA clean vehicle tax credits (30D/45W/25E) as of September 30, 2025, following passage of the One Big Beautiful Bill Act ("OBBBA") on July 4, 2025.

The Multi-Pollutant Rule RIA included projections for the availability and use of IRA battery production tax credits, shown in Table 1. EPA assumed most EV batteries would be U.S.-made and qualify for approximately $29 - $32/kWh in battery tax credits between MYs 2027–2029. However, OBBBA established new domestic content and prohibited foreign entity rules which take effect in 2026. Depending on how the new rules are implemented and how quickly U.S. supply chains can be established, a significant portion of EV batteries may no longer qualify for the 45X battery production tax credits after 2025. To put the loss of a $29-$32/kWh incentive into perspective, an EV with a 100 kWh battery pack would cost an additional ~$3,000.

[41] U.S. Environmental Protection Agency, *Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, Regulatory Impact Analysis*, EPA-420-R-24-004 (Mar. 2024) (hereinafter "Multi-Pollutant Final Rule RIA") at 4-28.

Year	Tax credit value in EPA modeling
2023	$22.50
2024	$24.11
2025	$25.71
2026	$27.32
2027	$28.93
2028	$30.54
2029	$32.14
2030	$25.31
2031	$19.69
2032	$11.25
2033	$0.00

Table 1: Battery production tax credits assumed in OMEGA ($/kWh)[42]

Similarly, Table 2 shows that EPA projected $3,600–$3,900 in average vehicle price reductions from 30D and 45W incentives, which are also nullified by OBBBA. This 30D/45W incentive loss will certainly influence a customer's purchase decision on an EV.

Year	Tax credit value in EPA modeling[43]	Maximum available credit after OBBBA
2023	$2925	$7500
2024	$3225	$7500
2025	$3300	$7500*
2026	$3300	$0
2027	$3600	$0
2028	$3750	$0
2029	$3900	$0
2030	$4125	$0
2031	$5075	$0
2032	$6000	$0
2033	$0	$0

* Tax credit expires after September 30, 2025.

Table 2: Vehicle purchase tax credits assumed in OMEGA vs. maximum credit available following passage of OBBBA ($/vehicle)

[42] U.S. Environmental Protection Agency, *Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles; Regulatory Impact Analysis*, EPA-420-R-24-004 (Mar. 2024) at 2-95, Table 2-49.

[43] *Id.* at 2-95, Table 2-50.

The end of 30D/45W/25E clean vehicle tax credits on September 30, 2025, will increase the effective price of EVs to consumers, likely further impairing market growth or potentially leading to a near-term decline in EV market share. This harms not only the automotive manufacturers that have spent hundreds of millions of dollars investing in electric vehicle technology, but also the entire supply chain that has supported these initiatives.

Independent Analysts Project EV Market Demand Will Be Lower as a Result of Eliminating IRA EV Policies

EV market share growth has already flattened over the past year as described above. The OBBBA, signed into law just two months ago, is also expected to significantly alter the EV market. OBBBA eliminates the IRA's new EV incentive of up to $7,500 for new EVs, used EV incentive of up to $4,000, and substantially modifies the advanced manufacturing tax credit for EV batteries of up to $45 per kilowatt-hour. High upfront cost is already one of the top reasons consumers cite in deciding to not purchase EVs, and changes made by OBBBA will likely decrease the affordability of EVs.

Various independent research groups are projecting EV market share drops of 20 to 45 percent below business-as-usual EV projections. Energy Innovation predicts that 2030 EV market share will drop from 55 percent to 31 percent (a 44 percent reduction) when the IRA incentives are eliminated.[44] The International Council on Clean Transportation ("ICCT") predicts that 2030 EV market share of 40 percent in 2030 with the IRA and about 32 percent without it (a 20 percent drop).[45] The Princeton University ZERO Lab suggests that EV sales could drop 30 percent in 2027 and 40 percent in 2030 relative to a scenario where previous policies are continued.[46] The National Bureau of Economic Research ("NBER") found that EV market share penetration would drop from 11.2 percent to 8.33 percent (a 25 percent drop).[47]

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[44] Energy Innovation Policy and Technology LLC, *Impacts of the One Big Beautiful Bill on U.S. energy costs, jobs, health and emissions* (Jun. 2025. Available at https://energyinnovation.org/wp-content/uploads/Impacts-Of-The-One-Big-Beautiful-Bill-On-U.S.-Energy-Costs-Jobs-Health-And-Emissions_FINAL.pdf. (Accessed Aug. 29, 2025.)

[45] Anh, B., Pierce, L., Slowik, P., & Searle, S., *How the Inflation Reduction Act is driving U.S. job growth across the electric vehicle industry*. International Council on Clean Transportation (Apr. 2025). Available at https://theicct.org/wp-content/uploads/2025/04/ID-344-%E2%80%93-IRA-jobs_report_final.pdf. (Accessed Aug. 29, 2025.)

[46] Jenkins, J., *Potential impacts of electric vehicle tax credit repeal on US vehicle market and manufacturing* (v2), Zenodo (2025). Available at https://doi.org/10.5281/zenodo.15047921. (Accessed Aug. 29, 2025.)

[47] Allcott, H., Kane, R., Maydanchik, M. S., Shapiro, J. S., & Tintelnot, F., *The effects of "buy American": Electric vehicles and the Inflation Reduction Act* (Working Paper No. 33032), National Bureau of Economic Research (2024), Table 6: Counterfactual Simulation Results. Available at https://www.nber.org/system/files/working_papers/w33032/w33032.pdf. (Accessed Aug. 29, 2025.)

Following Passage of the OBBBA, Third Party Projections of EV Market Share Are Significantly Lower Than EPA Projections in the Multi-Pollutant Rule

Figure 6 shows recent U.S. light-duty EV market share, the market share used in the Multi-Pollutant Rule's central analysis, a recent projection from BloombergNEF, and an ICCT study of the impacts of IRA incentives and California's ACC II ZEV mandate. The EPA projection includes EPA's IRA assumptions. The ICCT projection removes IRA incentives and the EPA Multi-Pollutant Rule, and excludes the ACC II ZEV Mandate, the waiver for which was rejected by Congress under the Congressional Review Act. The BloombergNEF projection assumes EPA and NHTSA deregulatory actions and lower IRA incentives, but assumes continuation of the California ACC II ZEV Mandate. Even as early as 2025, clear differences appear. Through H1, 2025, actual EV market share was approximately 9.6% in contrast to EPA's projection of 20%. In 2030, the ICCT and BloombergNEF projections are approximately 34% and 27%, respectively, whereas EPA projected 53% EV market share for compliance with the 2030 light-duty vehicle GHG standard. It is clear that EPA's projections were optimistic, especially with developments in U.S. policy that occurred following issuance of the Multi-Pollutant Rule.

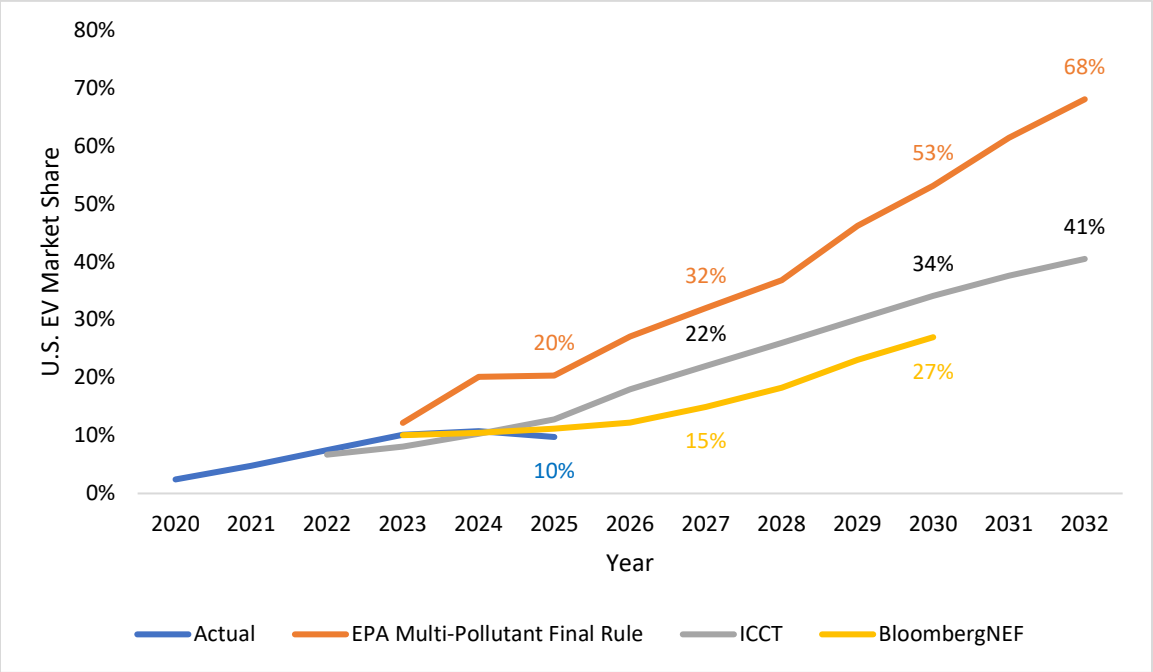

Figure 6: U.S. EV Market Share – Historical[48] and Projections by EPA,[49] ICCT,[50] and BloombergNEF[51]

The GHG standards in the Multi-Pollutant Final Rule are no longer feasible. EV market share is well below the share estimated as needed for compliance even in the near-term, and various third party projections imply that this divide is likely to continue and grow in the coming years. EPA should act immediately to revise the 2027 and later GHG standards.

[48] Alliance for Automotive Innovation, *Electric Vehicle Sales Dashboard* (May 22, 2025). Available at https://www.autosinnovate.org/EVDashboard (paywall) (accessed Aug. 29, 2025). Data compiled by the Alliance for Automotive Innovation using information provided by S&P Global Mobility and Hedges & Co. Data for 2025 represents year-to-date through Q2 2025, compiled by Alliance for Automotive Innovation with new registrations for retail and fleet data provided by S&P Global Mobility covering January 1, 2024 – June 30, 2024 and January 1, 2025 – June 30, 2025.

[49] Multi-Pollutant Rule (*supra* note 7) at 27856, Table 3. Pre-2027 projected EV share calculated by Auto Innovators from associated OMEGA 2.5.0 output files.

[50] International Council on Clean Transportation, *Analyzing the Impact of the Inflation Reduction Act on Electric Vehicle Uptake in the United States* (Jan. 2023) at 13, Table 2.

[51] BloombergNEF, *Electric Vehicle Outlook 2025* (Jun. 2025) at 3, Figure 3.

Manufacturers of Medium-Duty Vehicles Face Similar Challenges

Manufacturers of medium-duty vehicles face similar challenges with a projected need for 43% EV market share by 2032.[52]

Medium-duty vehicle electrification has made minimal progress over the past five years, with EV sales consistently hovering around 2%, despite substantial government incentives. MDVs serve distinct operational roles that differ from light-duty vehicle classes, making electrification more complex. MDV EV adoption has not gained traction, even with financial support.

The Multi-Pollutant Rule projected MDV EV sales to jump from 3% in 2027 to 43% by 2032—a 20-fold increase from today's 2%. These projections are unrealistic due to current market challenges and the phase-out of federal incentives. Such assumptions don't reflect industry realities, making the standards hard to meet. With low MDV EV sales today and elimination of incentives, reaching these aggressive targets is unlikely. Regulations based on these assumptions risk limiting consumer options and putting excessive pressure on manufacturers to fundamentally alter markets without commensurate consumer interest.

EV Charging Infrastructure Growth Is Also Needed

The availability of EV charging infrastructure is widely recognized as an impediment to reaching the market EV volumes necessary to comply with the GHG standards in the Multi-Pollutant Rule. Slower than needed progress in deploying EV charging infrastructure by both private and government entities coupled with mixed messaging on National Electric Vehicle Infrastructure ("NEVI") funding[53] will only further hinder growth.

Assuming the California Energy Commission's recommended ratio of a maximum ~6.9 EVs per public charge point to support market acceptance,[54] an estimated 3.8 million public EV chargers are needed to support a growth to roughly 26 million EVs on the road in 2030.[55]

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[52] Calculated by Auto Innovators from U.S. Environmental Protection Agency, Optimization Model for reducing Emissions of Greenhouse Gases from Automobiles, OMEGA 2.5.0 Downloadable Materials, Medium-duty central case (March 2024) (zip). Available at https://www.epa.gov/regulations-emissions-vehicles-and-engines/optimization-model-reducing-emissions-greenhouse-gases. (Accessed Sep. 12, 2025.)

[53] Trump just canceled the federal NEVI EV charger program | Electrek - February 6, 2025 - https://electrek.co/2025/02/06/trump-just-canceled-the-federal-nevi-ev-charger-program/ and https://www.fhwa.dot.gov/environment/nevi/resources/state-plan-approval-suspension.pdf and Trump administration pledges to keep, streamline EV charger program

[54] Electric Vehicle Charging Infrastructure Assessment - AB 2127 – CA.GOV https://www.energy.ca.gov/data-reports/reports/electric-vehicle-charging-infrastructure-assessment-ab-2127

[55] EEI Projects 26 Million Electric Vehicles Will Be on US Roads in 2030 - https://www.eei.org/en/news/news/all/eei-projects-26-million-electric-vehicles-will-be-on-us-roads-in-2030

An assessment by the U.S. National Renewable Energy Laboratory ("NREL") released in June 2023 estimated that a public network of 1.248 million charging ports would be necessary to support 50 percent EV sales by 2030 (and 33 million EVs on the road).[56] At the end of Q2 2025, there were about 218,000 public charging ports across the country.[57] Meeting the projected charging network need for 50% EV sales in 2030 would require installing 513 chargers every day for the next 5.5 years.

Establishing the necessary charging network to support compliance with EPA's Multi-Pollutant Rule is not realistic in light of installation trends and the possible reduction in governmental funding. The estimates above indicate the magnitude of the disparity between EV infrastructure growth and the necessary EV sales to meet the current GHG regulation.

The following facts further demonstrate other inadequacies of U.S. public charging infrastructure in light of the ambitious EV volumes required by the GHG regulation.[58]

- 27% of counties had no access to public charging.
- 41% of counties had five or fewer charging ports.
- One-third of all charging is located in just 25 counties.
- 44% of counties had no DC fast charging available.
- 6% of counties had access to only one DC fast charger.

EPA Should Document in the Record Why the Present Standards are not Appropriate

Clean Air Act § 202(a)(2) requires that "[a]ny regulation prescribed under paragraph (1) of this subsection (and any revision thereof) shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period."[59]

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[56] National Renewable Energy Laboratory, *The 2030 National Charging Network: Estimating U.S. Light-Duty Demand for Electric Vehicle Charging Infrastructure*, (June 2023) at 36. Available at https://docs.nrel.gov/docs/fy23osti/85654.pdf. (Accessed Sep. 17, 2025.)

[57] U.S. Department of Energy, *Alternative Fuels Data Center* (data as of 6/30/2025).

[58] Alliance for Automotive Innovation, "Alliance for Automotive Innovation Reports New U.S. Electric Vehicle Data" (Mar. 28, 2025). Available at https://www.autosinnovate.org/posts/press-release/2024-q4-get-connected-press-release. (Accessed Sep. 17, 2025.)

Based on the above and for other good reasons, it is clear that the time provided to apply the requisite technology (electric vehicles) at the levels needed to meet the MY 2027-2032 GHG (and Tier 4 NMOG+NOx) standards is not sufficient and therefore the standards are infeasible.

We request that EPA, as part of a final rule for the Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards, document and thoroughly explain how more recent information, reduced supportive policies, and updated projections demonstrate that the standards as currently promulgated are not achievable and to explicitly state that if GHG standards were to be retained or reinstated, they would need to be revised to meet the requirements of Clean Air Act ("CAA") § 202(a)(2).

In such an analysis, EPA should also consider factors beyond automakers' direct control. These include, but are not limited to, current and anticipated charging infrastructure and the readiness of U.S. and global EV supply chains needed to support any EV production projected as necessary for compliance (including the mining, processing, active material, and cell manufacturing production capacity). Consideration of EV supply chains must be done in the context of total global demand for critical minerals and other supply chain limitations. U.S. customer interest and purchase trends for EVs relative to other technologies should also be assessed; for example, through the use of a consumer choice model that includes convenience and other factors in addition to up front purchase cost.

An accurate and fulsome rulemaking record will be critical for navigating potential legal challenges and/or future changes in political direction. Auto Innovators' previous comments on the Multi- Pollutant Rule's proposal provide much of the detail we recommend for further inclusion.[60]

EPA Should Develop and Implement Revised GHG standards as an Alternative or Backstop to the Proposed Rule

Auto Innovators recommends that EPA issue an interim final rule ("IFR") to revise GHG standards pending a final decision on the Proposed Rule. Automakers are facing imminent compliance challenges and infeasible standards that are already underway.

A backstop is needed. We suggest that EPA set temporary standards based on a recent model year. The temporary action should also reinstate, for MY 2027 and later, alternative GHG targets for small volume manufacturers, consistent with the GHG improvements required of large volume manufacturers. If the Proposed Rule is finalized, it would replace the IFR standards and if standards were retained or otherwise reinstated, the IFR could temporarily address Auto Innovators' concerns while EPA develops a proposal for more reasonable and achievable standards.

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[60] *See supra* note 27.

An Interim Final Rule Would Meet Administrative Procedures Act Requirements

It is clear from the analysis above that compliance with EPA's Multi-Pollutant Final Rule requires a massive market shift from internal combustion to electric vehicles that could only happen with severe disruption to the U.S. automotive market and commensurate economic damages. These compelling and imminent circumstances justify an interim final rule.

Appendix II: Legal Matters

Severability of Endangerment Finding and Standard Setting

EPA proposes to find that the Agency cannot sever the endangerment finding from the action of setting standards under Section 202(a) of the Clean Air Act.[61] We think EPA's interpretation of the statute and its process for implementing Section 202(a) is correct. First, and most importantly, there is no basis in the statute to sever the analysis of endangerment from the analysis of contribution. There is one issue for EPA to determine, and that is whether emissions of a given pollutant from new motor vehicles or engines cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare—in other words, EPA must find that emissions from the regulated vehicles are the ones that specifically cause or contribute to endangerment of health or welfare.

Second, the structure of the statute combines this question with the Agency's standard setting. As EPA correctly points out, Congress speaks clearly when it requires a multi-step inquiry, like when it authorized the NAAQS and water quality standards programs, and such a multi-step inquiry is absent from Section 202(a).[62]

Whether the Proposal Would Impact Federal Preemption of State Regulation (C-10)

Rescinding the Endangerment Finding Would Not Limit the Scope of Preemption of State GHG Emission Standards Under the Clean Air Act

EPA proposes to find that repealing the Endangerment Finding "would not impact Federal preemption of emission standards for new motor vehicle and engine emission standards."[63] This is a correct reading of the law because the preemption provision in Section 209(a) is broader than the authority-to-regulate provision in Section 202(a).

Section 209(a) of the Clean Air Act is broad and unequivocal. It provides:

> No State or any political subdivision thereof shall adopt or attempt to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to this part. No State shall require certification, inspection, or any other approval relating to the control of emissions from any new motor vehicle or new motor vehicle engine as condition precedent to the initial

[61] 90 *Fed. Reg.* at 36302

[62] 90 *Fed. Reg.* at 36303

[63] 90 *Fed. Reg.* at 36315

> retail sale, titling (if any), or registration of such motor vehicle, motor vehicle engine, or equipment.[64]

Notably, there is no limitation on the types of "emissions" states are preempted from regulating. The scope of Section 209's preemption provision is therefore clear: Once a vehicle or engine is subject to Part A of Title II, no state can issue emissions standards for that vehicle or engine.[65]

By way of contrast, Section 202(a) contains important limitations and qualifiers. It provides, in relevant part:

> The Administrator shall by regulation prescribe (and from time to time revise) in accordance with the provisions of this section, standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.[66]

As the statute makes clear, EPA cannot regulate any and all emissions from new motor vehicles (similar to how states are preempted from regulating any and all emissions from new motor vehicles). The agency can only regulate emissions of "pollutants," and only those pollutants that EPA determines "cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." It is therefore clear that Congress intended that the preemptive scope of Section 209(a) be much broader and categorical than the authority to regulate conferred under Section 202(a).

This reading keeps with the underlying intent of Section 209(a)'s preemption provision, which was to protect the automotive industry from multiple and potentially inconsistent state standards which would increase economic strain on the industry.[67] Cabining in the scope of preemption such that it corresponds to EPA's regulations would undermine this purpose. Any emission that EPA is not regulating would then become fair game for the states to regulate, thus raising the risk that automakers would be subject to multiple inconsistent regulatory regimes.

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[64] 42 U.S.C. § 7543(a).

[65] The phrase "subject to this part" in Section 209(a) is best read as modifying "new motor vehicles or new motor vehicle engines," not "emissions." See Barnhart v. Thomas, 540 U.S. 20, 26 (2003) ("a limiting clause or phrase . . . should ordinarily be read as modifying only the noun or phrase that it immediately follows").

[66] 42 U.S.C. § 7521(a)(1).

[67] *See* S. Rep. No. 403, 90th Cong., 1st Sess., 33 (1967) ("The auto industry [] was adamant that the nature of their manufacturing mechanism required a single national standard in order to eliminate undue economic strain on the industry. . . . The industry, confronted with only one potential variation, will be able to minimize economic disruption and therefore provide emission control systems at lower costs to the people of the Nation.")

Precedent on Clean Air Act ("CAA") Title I displacement also supports the view that the Endangerment Finding will not alter federal common law preemption. In *American Electric Power v. Connecticut*, states sued owners of fossil-fuel-fired power plants seeking GHG emissions abatement under nuisance laws.[68] The Supreme Court held that the Clean Air Act displaces any federal common law right to seek carbon emissions abatement, and that displacement did not depend on EPA exercising its authority under the CAA. The Court asked only whether the statute "speaks directly to the question" at issue and concluded that Section 111 of the CAA did speak to limits on carbon emissions after *Massachusetts v. EP*A.[69] Importantly, the Court "disagree[d]" that "federal common law is not displaced until EPA actually exercises its regulatory authority."[70]

Consequently, EPA is correct that finalizing the proposal would not limit the scope of preemption under Section 209(a) of the Clean Air Act.

Rescinding the Endangerment Finding Would Not Limit the Scope of Preemption under EPCA

EPA also proposes to find that "the proposed repeal would not impact Federal preemption under EPCA, as amended by EISA, related to fuel economy standards."[71] This too is a correct reading of the law. EPCA provides, in relevant part:

> When an average fuel economy standard prescribed under this chapter is in effect, a State or a political subdivision of a State may not adopt or enforce a law or regulation related to fuel economy standards or average fuel economy standards for automobiles covered by an average fuel economy standard under this chapter."[72]

There is nothing in the text of EPCA's preemption provision that limits its scope in the event that EPA fails to regulate GHG emissions. And as discussed above, EPA's failure to regulate GHG emissions under Section 202(a) of the Clean Air Act does not limit the scope of preemption

[68] 564 U.S. 410, 418 (2011) ("AEP")

[69] *Id.* at 423-24.

[70] *Id.*

[71] 90 *Fed. Reg.* 36314.

[72] 49 U.S.C. § 32919(a).

under that Act, nor would the waiver provision in Section 209(b), which by its terms only "waive application of this section."[73]

Similar to the Clean Air Act, EPCA's preemption provision was designed to provide for nationwide regulation of fuel economy and to protect the auto industry from having to comply with a multitude of state standards.[74] Construing EPCA preemption to depend on an Endangerment Finding under Section 202 would undermine this fundamental purpose of EPCA.

Consequently, the scope of EPCA preemption would not be impacted by the finalization of this rule.

Comments on V.A. "Requisite Technology" Rationale for Rescinding Motor Vehicle Greenhouse Gas Standards (C-12)

EPA proposes to repeal the GHG emission standards based on the conclusion that "there is no 'requisite technology' for vehicle emission control capable of having a measurable impact on the dangers identified in the Endangerment Finding," *i.e.,* global climate change.[75] Auto Innovators agrees that consideration of Section 209(a)(2) would support reconsidering and revising the existing light-duty GHG standards. However, we caution against relying on this rationale as a basis for rescinding the standards altogether without replacing them, in light of the command in Section 202(a) that EPA "shall" prescribe emission standards regulating any pollutant from motor vehicles that cause, or contribute to, air pollution which endangers the public health or welfare.[76]

Subsection (a)(2) provides:

> Any regulation prescribed under paragraph (1) of this subsection (and any revision thereof) shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period.[77]

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[73] 42 USC § 7543(b).

[74] *See* S. 1883, 94th Cong., 1st Sess., Section 509; 3 H.R. 7014, 94th Cong., 1st Sess., Section 507 as introduced, Section 509 as reported (seeking to preempt State laws only if they were not "identical to" a Federal requirement).

[75] 90 *Fed. Reg.* at 36296-97.

[76] *See Coalition for Responsible Regulation v EPA*, 684 F.3d 102, 126 (D.C. Cir. 2012) ("By employing the verb 'shall,' Congress vested a non-discretionary duty in EPA.")

[77] 42 USCS § 7521(a)(2).

By its very terms, then, the requirement to provide time "necessary to permit the development and application of the requisite technology" is tied to the "regulations prescribed under paragraph (1)." In other words, EPA cannot prescribe standards that are so stringent on such a fast timeline that automakers are unable to develop and deploy the technology needed to comply with the standards.

For the reasons discussed above, Section 202(a)(2) weighs strongly in favor of reconsidering and revising the GHG standards that were finalized by the prior administration in 2024. The vehicle "technology" relied on most heavily by that administration to achieve compliance with the standards is vehicle electrification. While electrification is now a maturing technology, the question is whether the prior standards provided enough time for the "application" of electrification over a sufficient portion of automaker fleets to comply with those stringent standards. As discussed above, the answer is clearly no, and on that basis, EPA should revise the existing GHG standards.

Comments on the Application of the Major Questions Doctrine

EPA proposes to find that "the major questions doctrine applies and precludes the EPA from asserting authority to regulate in response to global climate change concerns under CAA section 202(a)."[78] While Auto Innovators agrees that it is important to consider the application of the major questions doctrine to EPA actions, we think that the doctrine is more appropriately assessed with respect to *both* the Endangerment Finding and the specific set of standards that result from the Endangerment Finding, as opposed to applying the doctrine to the Endangerment Finding in isolation. Indeed, assessing the question in that context is consistent with EPA's proposed conclusion that the agency cannot sever the Endangerment Finding from the standard setting, which, as discussed above, we agree with. In other words, the proper inquiry is whether EPA's unified action--i.e., a finding of endangerment along with the resulting emission standards--implicates the major questions doctrine.

This conclusion is supported by the two-prong framework the Supreme Court has articulated to analyze the major questions doctrine. First, courts ask whether the agency action is "unheralded," *i.e.* whether it represents a "transformative expansion" in the agency's authority in the vague language of a long-extant, but rarely used, statute.[79] Second, courts ask if the regulation is of "vast economic and political significance" and "extraordinary" enough to trigger the doctrine.[80] In light of this framework, it seems appropriate for EPA to consider whether the

[78] 90 *Fed. Reg.* at 36299.

[79] *West Virginia v. EPA*, 597 U.S. 697, 724-25 (2022).

[80] *Id.* at 716, 721 (citations omitted).

specific standards the Agency is considering (or in this case reconsidering) implicate the major questions doctrine because of the expansive power the Agency is wielding in promulgating the standards and because of their economic and political significance.

We therefore think it is appropriate for EPA to consider whether specific emission standards the agency is setting (or revising) as a result of an endangerment finding implicate the major questions doctrine, especially to the extent that the standards are aimed at bringing about a fundamental shift in the new vehicle market that does not align with the relative market demand for internal combustion engine vehicles and electric vehicles.

Comments on Consideration of Policy Issues When Setting Standards (C-13)

EPA proposes to find that "policy considerations may be taken into account, at a minimum, when setting standards in response to an endangerment finding or, as here, when determining whether to maintain standards already established."[81] This is an entirely correct reading of the law and statement of EPA's discretion in setting standards. As pointed out in the preamble, the *Massachusetts* court did not "reach the question . . . whether policy concerns can inform EPA's actions in the event that it makes such a[n endangerment] finding."[82] The Court also noted that "EPA no doubt has significant latitude as to the manner, timing, content, and coordination of its regulations with those of other agencies."[83] Moreover, EPA has consistently maintained that the agency has considerable discretion concerning the appropriate emission standard for a given pollutant in light of the various policy considerations it must weigh. EPA has stated that:

> EPA also has significant discretion in considering a range of stringency. Section 202(a)(2) of the Clean Air Act requires only that the standards "take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period." This language affords EPA considerable discretion in how to weight the critical statutory factors of emission reductions, cost, and lead time.[84]

Auto Innovators therefore supports EPA's conclusion that the Agency may take policy considerations into account in setting or revising GHG emission standards.

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[81] 90 *Fed. Reg.* at 36311.

[82] Massachusetts, 549 U.S. at 534-35.

[83] *Id.* at 533.

[84] *See* 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 77 *Fed. Reg.* 62624, 62670 (Oct. 15, 2012) (quoting *Center for Auto Safety v. NHTSA*, 793 F.2d 1322, 1341 (D.C. Cir. 1986) and *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1195 (9th Cir. 2008).

Need for a Severability Clause

As a final matter, we recommend that EPA include a severability clause clarifying that even if the repeal of the Endangerment Finding or the revision of other GHG emissions standards is invalided by a court, it does not impact the reconsideration of the GHG emissions standards in this rulemaking. Similarly, EPA should include a severability clause for each section of its rulemaking so that if a court invalidates one section, the balance of the final rule remains in effect.[85] The severability clause is a clear logical outgrowth of the proposed rule. A final rule satisfies the doctrine if it is a "logical outgrowth" of the proposed rule—meaning that interested parties/commenters could reasonably have anticipated the substance of the final rule from the proposed rule and thus had a meaningful opportunity to comment.[86] EPA included a variety of arguments and justifications for its proposed reconsideration and other actions. Because some of the justifications apply to only some portions of the proposed rule, it should not come as a surprise to any commenter that EPA would want to insulate provisions with a severability clause.

[85] *See, e.g., Iowa, et al. v. Wright et al*., 2025 U.S. App. LEXIS 23013, No. 24-1721 at 36 (8th Cir. Sept. 5, 2025).

[86] *See Mid Continent Nail Corp. v. United States*, 846 F.3d 1364 (Fed. Cir. 2017); *First Am. Discount Corp. v. CFTC*, 222 F.3d 1008 (D.C. Cir. 2000); *Northeast Md. Waste Disposal Auth. v. EPA*, 358 F.3d 936 (D.C. Cir. 2004).

Appendix III: Comments on Regulatory Text If EPA Finalizes Its Proposal to Rescind Motor Vehicle GHG Emission Standards (C-16)

If EPA finalizes its proposal to repeal all regulatory provisions relating to GHG emission programs, we recommend the following additional or modified revisions.

40 CFR 85.2104 Owners' compliance with instructions for proper maintenance and use.

EPA proposes to remove battery-related requirements for battery electric and plug-in hybrid electric vehicles (40 CFR 86.1815-27). Paragraph (f) of 40 CFR 85.2104 is related to electric vehicle battery durability and should be removed.

40 CFR 86.1803-01 Definitions.

In the definition of *medium-duty passenger vehicle* ("MDPV"), remove paragraph (2) of the definition for MY 2027 and later to ensure the Tier 4 criteria emission MDPV definition is aligned with NHTSA CAFE MDPV definition. This will also avoid medium-duty vehicles becoming subject to light-duty vehicle standards.

40 CFR 86.1806-27 Onboard Diagnostics; 40 CFR 1036.110 Diagnostic Controls.

EPA did not propose deleting the GHG monitoring and tracking requirements in its LDV, MDV, HDE, and HDV OBD regulations. These requirements are embedded in the California OBD regulations, which EPA incorporates by reference. EPA should exclude these GHG-related requirements, in the same manner as they previously excluded specific California OBD requirements.

We recommend that EPA amend 40 CFR 86.1806-27(a) to add:

- (9) The definition of "Active Off-Cycle Credit Technology" in 13 CCR 1968.2(c) does not apply.
- (10) The vehicle operations and control strategies standardization requirements in 13 CCR 1968.2 (g)(6.3), (6.4), (6.5), (6.8), (6.9), (6.10), and (6.11) do not apply.
- (11) The data reporting and storage requirements in 13 CCR 1968.2(h)(6.1) related to the standardization requirements in 13 CCR 1968.2(g)(8.1) do not apply.
- (12) The certification documentation requirement related to "Active Off-Cycle Credit Technologies" in 13 CCR 1968.2(i)(2.28) does not apply.
- (13) The monitoring system demonstration requirements in 13 CCR 1968.2(h)(5.3.1)(D) and (5.3.2)(A)(iii) related to CO_2 emissions data does not apply.

And amend 40 CFR 1036.110(b) to add:

- (14) The definition of "Active Technology" in 13 CCR 1971.1(c) does not apply.
- (15) The standardization requirements in 13 CCR 1971.1(h)(5.4) do not apply.
- (16) The data storage requirements in 13 CCR 1971.1(h)(6.1) related to the standardization requirements in 13 CCR 1971.1(h)(5.4) do not apply.
- (17) The certification documentation requirement related to "Active Technology" in 13 CCR 1971.1(j)(2.32) does not apply.
- (18) The monitoring system demonstration requirements in 13 CCR 1971.1(i)(4.3.2)(C) related to CO_2 emissions data does not apply.

40 CFR 86.1829-15 Durability and emission testing requirements; waivers.

EPA proposes to remove battery-related requirements for battery electric and plug-in hybrid electric vehicles (40 CFR 86.1815-27). Paragraph (a)(2) of 40 CFR 86.1829-15 refers to 40 CFR 86.1815-27 and should be removed.

40 CFR 86.1839-01 Carryover of certification and battery monitoring data.

For the avoidance of any future confusion, strike "and battery monitoring data" from the section title.

40 CFR 86.1844-01 Information requirements: Application for certification and submittal of information upon request.

EPA proposes to remove battery-related requirements for battery electric and plug-in hybrid electric vehicles (40 CFR 86.1815-27). Paragraph (d)(19) of 40 CFR 86.1844-01 refers to 40 CFR 86.1815-27 and should be removed.

In paragraph (e)(1) as proposed to be amended, it may be helpful to clarify that "exhaust" emissions are criteria emissions and do not include greenhouse gas emissions.

40 CFR 86.1847-01 Manufacturer in-use verification and in-use confirmatory testing; submittal of information and maintenance of records.

Paragraph (g) refers to requirements under 40 CFR 86.1815-27, which would be deleted under EPA's proposal. Paragraph (g) of 40 CFR 86.1847-01 should likewise be deleted.

40 CFR 86.1848-10 Compliance with emission standards for the purpose of certification.

EPA proposes to remove battery-related requirements for battery electric and plug-in hybrid electric vehicles (40 CFR 86.1815-27). Paragraphs (c)(2), (5), and (10) refer to the requirements of 40 CFR 86.1815-27 and should be removed.

40 CFR 600.113-12 Fuel economy, CO2 emissions, and carbon-related exhaust emission calculations for FTP, HFET, US06, SC03 and cold temperature FTP tests.

Paragraph (g)(3) should be retained. This paragraph pertains to the number of decimal places and units for specific gravity, carbon weight fraction, and net heating value.

If paragraph (g)(3) is retained, additional technical corrections should be made. Paragraph (g)(3) requires carbon weight fraction to be recorded. However, paragraph (f)(1) specifies carbon mass fraction for gasoline and E10. This should be corrected. Paragraph (g)(3) requires net heating value to be recorded. However, (f)(1) uses the term net heat of combustion for gasoline and E10. Also, (f)(1) specifies the units for net heat of combustion as MJ/km, but (g)(3) specifies Btu/lb. These should be corrected. Related to units, consider whether significant precision affecting verification of calculations would be lost (or inadvertently gained) in the conversion from MJ/km to Btu/lb and the subsequent rounding.

40 CFR 600.116-12 Special procedures related to electric vehicles and hybrid electric vehicles.

Equation 3 to paragraph (c)(2)(iii) related to the calculation of fuel economy for dual fueled automobiles specifies the use of the "appropriate utility factor for city or highway driving specified in paragraph (c)(1) of this section for model year 2030 and earlier vehicles." Given EPA's proposal to retain only CAFE-related provisions, Table 1 to paragraph (c)(1) should be modified to retain only the utility factors labeled as "Model year 2030 and earlier", deleting those labeled as "Model year 2031 and later" and removing the labels related to model year applicability. This revision would simplify and clarify the section by retaining only the utility factors specified for use in CAFE-related calculations. The action would also clarify and remove any potential source of confusion related to the appropriate utility factors for calculation of air conditioning efficiency and off-cycle credits for the CAFE program under 40 CFR 86.1868-12 and 40 CFR 86.1869-12.

40 CFR 600.117 Interim provisions.

Paragraph (a)(1) requires manufacturers to "demonstrate compliance with greenhouse gas emission standards[…]" This portion of the sentence should be deleted if motor vehicle GHG emission standards are rescinded.

40 CFR 1036.115 Other requirements.

EPA proposes to delete paragraph (b) of 40 CFR 1036.115. We believe this change is in error.

Appendix IV: Recommended Clarifications and Technical Corrections to Regulatory Text if Motor Vehicle GHG Standards are Retained

If EPA decides to not finalize its proposal to repeal all regulatory provisions relating to GHG emission programs, we recommend the following technical corrections and clarifications.

40 CFR 86.1 Incorporation by reference.

Paragraph (h)(1) incorporates United Nations Global Technical Regulation, No. 22 as adopted April 14, 2022. An updated version was adopted in 2024. We recommend that EPA allow the latest version of United Nations Global Technical Regulation, No. 22 as an alternative to the version originally incorporated by reference.

40 CFR 86.1815-27 Battery-related requirements for battery electric vehicles and plug-in hybrid electric vehicles.

For the optional CARB path included in § 86.1815-27(h) for battery electric vehicles, it is our understanding that CARB ACC II 13 CCR 1962.5 data standardization shall apply, which would require the CARB State-of-Health ("SOH") battery monitor instead of state-of-certified energy ("SOCE") monitor. As such section § 86.1815-27 section (h)(8)(ii) should be revised to reference SOH or generically say battery state of health instead of SOCE regarding the attestation for meeting the monitor accuracy. Additionally, EPA should clarify that the accuracy should be held to 13 CCR 1962.5(c) (4)(A)(4)(c) accuracy requirements.

We further recommend that EPA clarify that evaluating SOCE based on a declared useable battery energy is acceptable. For example, by implementing the following change.

> 40 CFR 86.1815-27(c)
>
> Evaluate SOCE based on measured Usable Battery Energy (UBE) values. Use the Multi-Cycle Range and Energy Consumption Test described in 40 CFR 600.116-12(a) for battery electric vehicles and either the UDDS Full Charge Test (FCT) or the HFET FCT as described in 40 CFR 600.116-12(c)(11) for plug-in hybrid electric vehicles. Manufacturers may evaluate SOCE based on a declared UBE. If using a declared UBE, manufacturers must use Good Engineering Judgment to ensure that the declared UBE reasonably reflects the expected UBE value for that battery durability family. If a manufacturer voluntarily lowers UBE using a declared value, they must use this declared value in calculations described in 40 CFR 600.210-12 and 40 CFR 600.311-12. For medium-duty vehicles, perform testing with test weight set to Adjusted Loaded Vehicle Weight.

40 CFR 86.1847-01 Manufacturer in-use verification and in-use confirmatory testing; submittal of information and maintenance of records.

Paragraph (g)(1) requires manufacturers to submit records after completing low-, intermediate-, and high-mileage tests. However, 40 CFR 86.1845-04(g) only requires testing at low- and high-mileage, without an intermediate-mileage requirement. Paragraph (g)(1) should be corrected to only apply at low- and high-mileage.

40 CFR 600.113-12 Fuel Economy, CO2 emissions, and carbon-related exhaust emission calculations for FTP, HFET, US06, SC03 and cold temperature FTP tests.

Paragraph (g)(2) can be deleted even if EPA decides to not proceed with its proposal to rescind GHG-related standards. This paragraph is only applicable to 2012-2016 model years.

Paragraph (g)(3) requires carbon weight fraction to be recorded. However, paragraph (f)(1) specifies carbon mass fraction for gasoline and E10.

Paragraph (g)(3) requires net heating value to be recorded. However, (f)(1) uses the term net heat of combustion for gasoline and E10. Also, (f)(1) specifies the units for net heat of combustion as MJ/km, but (g)(3) specifies Btu/lb. Related to units, consider whether significant precision affecting verification of calculations would be lost (or inadvertently gained) in the conversion from MJ/km to Btu/lb and the subsequent rounding.

Appendix V: Recommended Clarifications and Technical Corrections That Should Be Made Regardless of the Rescission or Retention of Motor Vehicle GHG Standards

Regardless of whether or not EPA finalizes its proposal to repeal all regulatory provisions related to GHG emission programs, we recommend the following technical corrections and clarifications.

40 CFR 86.113-15 Fuel specifications.

Paragraph (a)(2)(i) allows use of California Phase 3 gasoline (E10 LEV III) for vehicles certified for 50-state sale. CARB has also adopted a LEV IV E10 fuel that we believe should also be treated as equivalent. See California 2026 and Subsequent Model Year Criteria Pollutant Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles I.A.3.1.

40 CFR 86.113-27 Fuel specifications.

Paragraph (c)(2) allows use of California Phase III (LEV III) fuel for vehicles certified for 50-state sale. CARB has also adopted a LEV IV E10 fuel that we believe should also be treated as equivalent. See California 2026 and Subsequent Model Year Criteria Pollutant Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles I.A.3.1. Paragraph (c)(2)(i) would then refer to LEV III or LEV IV gasoline as adopted in California's LEV III and LEV IV programs. Similarly, the reference to California Phase 3 gasoline in (c)(2)(ii) would instead reference California LEV III or LEV IV fuel.

40 CFR 86.1811-27 Criteria exhaust emission standards.

Notwithstanding our support for reconsideration of certain Tier 4 requirements in a separate rulemaking, we recommend the following technical corrections be made in the interim.

Paragraph (b)(3) states, "FTP standards specified in this paragraph (b) apply equally for testing at low-altitude conditions and high-altitude conditions. The US06, SC03, and HFET standards apply only for testing at low-altitude conditions." No specific mention is made of including or excluding the ACC II mid-temperature intermediate soak, ACC II early driveaway, or ACC II high-load PHEV engine start standards. Given the lack of discussion in the preamble of applying these cycles at high-altitude, and the approach taken by CARB in its LEV IV program to only apply these standards at low-altitude, we believe EPA's intent is to exclude the ACC II cycles from application at high-altitude conditions. However, this is not clear from the regulatory text and may be interpreted differently given that a number of the ACC II cycles are based on the FTP. We recommend that EPA clarify that the ACC II cycles only apply at low altitude.

Paragraph (b)(6)(iv) includes an explanatory note on interim Tier 4 light-duty vehicles above 6,000 lbs. GVWR. As currently written, the explanatory note could be interpreted as requiring such vehicles to meet both the Tier 3 and Tier 4 fleet average requirements. EPA should clarify what fleet average requirement interim Tier 4 light-duty vehicles above 6,000 lbs. GVWR must meet.

40 CFR 86.1829-15 Durability and emission testing requirements; waivers.

Notwithstanding our support for reconsideration of certain Tier 4 requirements in a separate rulemaking, paragraph (b)(3) requires testing of one EDV in each test group to each of the three discrete mid-temperature soak standards. However, the preamble clearly describes that EPA is only requiring testing for the 40-minute soak requirement and allowing manufacturers to attest to meeting standards at all other soak times.[87] The preamble is also consistent with EPA's response to comments at 1224. Paragraph (d)(7) is consistent with the preamble and response to comments stating, "Manufacturers may provide a statement in the application for certification that vehicles comply with the mid-temperature intermediate soak standards for soak times not covered by testing." Therefore, we believe paragraph (b)(3) should be corrected to only require testing for the 40-minute soak requirement.

40 CFR 86.1839-01 Carryover of certification and battery monitoring data.

Paragraph (c) references monitor accuracy under § 86.1822-01(a); we believe it should reference § 86.1845-04(g).

40 CFR 86.1844-01 Information requirements: Application for certification and submittal of Information upon request.

The attestation under paragraph (d)(7)(v) will require an engineering analysis. EPA should clarify what data is acceptable.

EPA should clarify that data using the California LEV IV approach is sufficient for Tier 4 compliance.

40 CFR 86.1846-01 Manufacturer in-use confirmatory testing requirements.

In paragraph (b) EPA describes that, "For vehicles tested in the IUVP to qualify for IUCP, there is a threshold of 1.30 times the certification emission standard for criteria emissions (e.g., NMOG+NOX, CO) and an additional requirement that at least 50 percent of the test vehicles for the test group fail for the same substance." 89 Fed. Reg. 27977. The revised language appears to be an attempt to clarify the existing requirements without a change in procedures. EPA should

[87] 49 *Fed. Reg.* 27956.

clarify that no change to IUCP requirements is intended, other than adding interim provisions for particulate matter ("PM").

Paragraph (b) adds an interim approach for PM emissions, requiring additional testing ". . . if 80 percent of vehicles from the test group exceed 1.30 times the in-use standard . . ." In contrast, the preamble describes that, "The temporary criteria consist of a mean test group PM equal to or greater than 1.30 times the standard and the failure rate among vehicles in that test group of 80% or higher. These are fundamentally different approaches despite the similarity of the numerical values. EPA should clarify that no change to IUCP requirements is intended, other than adding interim provisions for PM.

40 CFR 86.1868-12 CO2 credits for improving the efficiency of air conditioning systems.

Regardless of whether GHG standards are rescinded or not, EPA should clarify how the provisions apply to PHEVs starting in MY 2027 given their applicability to the CAFE program. We believe the intended process is: (1) Sum the applicable credits from Table 1 to paragraph (a). Total credit for the system may not exceed 5.0 g/mile for a passenger car or 7.2 g/mile for a light truck. (2) Adjust the summed credits for the PHEV air conditioning system with the appropriate combined city/highway fleet utility factor.

40 CFR 86.1869-12 CO2 credits for off-cycle CO2 reducing technologies.

Regardless of whether GHG standards are rescinded or not, EPA should clarify how the provisions apply to PHEVs starting in MY 2027 given their applicability to the CAFE program. We believe the intended process is: (1) Adjust credits with the appropriate combined utility factor when total credits are calculated under paragraph (f). (2) There is no further adjustment for PHEV utility factor in the calculation of "Decrease" under paragraph (b)(2)(i), which is then compared to the applicable cap under paragraph (b)(2)(v). (3) There is no adjustment to credit values for PHEVs under paragraph (b)(1)(viii)(A) through (E) (thermal control technologies) before determining whether the total credit under (b)(1)(viii) exceeds the cap described in the introductory text of that paragraph. The lesser of the total credit or allowed capped credit under (b)(1)(viii) is carried to the calculation under paragraph (f) prior to adjustment by the utility factor.

EPA should also clarify whether previously approved alternative and 5-cycle method credits can be claimed for carry-over vehicles in MY 2027 and later.

40 CFR 600.010 Vehicle test requirements and minimum data requirements.

Paragraph (d) references 40 CFR 600.510-08(a), which no longer exists. The reference should be deleted.

40 CFR 600.113-12 Fuel Economy, CO2 emissions, and carbon-related exhaust emission calculations for FTP, HFET, US06, SC03 and cold temperature FTP tests.

The introductory text specifies that carbon weight fraction and net heating value of the test fuel must be determined. However, the revised (f)(1) for gasoline and E10 specifies the terms carbon mass fraction and net heat of combustion.

Under paragraph (f)(1)(ii)(B), for E10, the determination of carbon mass fraction of the hydrocarbon mass fraction (CMFh) relies on the average volatility of either Tier 3 or LEV III fuel, which are adjusted by a given constant. EPA should allow use of LEV IV E10 fuel with the same average volatility adjustment as LEV III. We believe LEV III E10 and LEV IV E10 should be treated as equivalent.

In paragraph (f)(1)(iii)(B) the text specifies the net heat of combustion of pure ethanol (NHCe) in terms of Btu/lb, but the equation for net heat of combustion of the test fuel (NHCf) is specified in terms of MJ/kg.

In paragraph (f)(1)(iii)(B), for E10, the net heat of combustion should be in BTU/lb, not MJ/kg based on the units provided for NHC_e. We also recommend that EPA specify BTU/lb for E0 fuel in paragraph (f)(1)(iii)(A).

In paragraph (h) multiple references are made to 40 CFR 86.113. However, there is no standalone 86.113. All sections 86.113 are specified as 86.113-XX, where XX refers to a model year of first applicability. This also leads to a lack of specificity in what is meant by the term "gasoline", although the distinction between Tier 3 E10 and earlier "gasoline" is implied by paragraph (o).

In paragraph (h) the equations all refer to carbon weight fraction from paragraph (f)(1). However, (f)(1) specifies carbon mass fraction.

In paragraph (h)(1) the fuel economy equation is written as a function of net heating value, referring to (f)(1). However (f)(1) determines net heat of combustion. Furthermore, the net heat of combustion from (f)(1) is expressed in terms of MJ/kg, but no revisions were made to (h)(1) to convert from MJ/kg to Btu/lb.

In paragraph (l) consider clarifying that this is not for E10, but is for ethanol-based fuels at higher concentrations.

In paragraph (o), the product of the density of water, specific gravity of the base fuel and net heat of combustion of base fuel in the numerator of the fuel economy equation using E10 calculates to 51,748,933 versus 51,740,000 used for E0. These values should be equal.

In paragraph (o), the value given for $NHC_{basefuel}$ should be 18,507 BTU/lb, not 43.047 MJ/kg.

In paragraph (o), the $NHC_{testfuel}$ should be in BTU/lb and report to the nearest whole number (not three decimal places).

Paragraph (o) uses the term $CMF_{testfuel}$. Presumably, this is intended to be CMF_f from (f)(1)(ii)(B), but this should be clarified.

Under paragraph (o), EPA should clarify that NMHC can be measured in lieu of NMOG per 40 CFR 1066.635(c) for use in paragraphs (o)(1) and (o)(2).

40 CFR 600.117 Interim provisions.

The regulations in this section mention the use of equivalent CARB LEV III E10 test fuel in multiple locations. We believe CARB LEV IV E10 test fuel should also be allowed as equivalent.

40 CFR 1066.815 Exhaust emission test procedures for FTP testing.

EPA should clarify that a full 4-bag FTP is allowed for measurement of PM regardless of powertrain type, provided that the provisions of 40 CFR 1066.815(c)(5) are met. There are provisions in 40 CFR 1066.820 for composite calculations using a full hot start UDDS (4-bag) as well as defining the FTP as potentially including a full hot-start UDDS instead of just the first 505 seconds.[88] The text of 40 CFR 1066.815(c)(5) could be clarified to read, in part, "You may collect PM on a single filter over the cold-start UDDS and the full hot-start UDDS, regardless of powertrain, using one of the following methods:"

[88] 40 CFR 1066.801(c)(1)(i).