



Ambitious and Achievable: EPA’s Proposed Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles

EPA releases proposed emissions standards for vehicles

On April 12, 2023, EPA released a proposal to cut vehicle emissions: a [multipollutant emissions standard for light-duty and medium-duty vehicles](#).¹ The proposed rule would set more stringent emissions standards for vehicles, grounded in EPA’s statutory authority under the Clean Air Act (CAA) Section 202(a) and its longstanding regulatory approach to vehicle emissions. The rule also builds on investments that the auto industry and Congress have already made to support vehicle electrification.²

The transportation sector is the largest domestic source of greenhouse gas (GHG) emissions, contributing nearly 30 percent of total emissions in the U.S. The sector is also a major contributor to ozone, particulate matter (PM), and air toxics that are associated with significant health impacts. For example, EPA states that in 2023, mobile sources will account for 54 percent of anthropogenic nitrogen oxide (NO_x) emissions.

To address these emissions, EPA proposes emission reduction standards for light- and medium-duty vehicles that are designed to be achievable with existing technology and follow industry trends toward electrification. While the new standards are ambitious, they are largely consistent with what the industry is projecting for itself. Along with the proposed standards, the agency is taking comments on three alternative standards with different rates of adoption and stringencies. EPA must consider and respond to these comments before promulgating its final rule.

In our analysis of the proposed light- and medium-duty vehicle standards, we provide an overview of the proposed requirements and review the statutory authority, regulatory history, and rapidly evolving legislative and economic context in which EPA developed this proposal. We also look at issues the agency will need to consider in a final rule based on the stakeholder comments EPA is now seeking.

For the history of EPA’s regulatory actions, including the ongoing litigation related to EPA’s standards for model years 2023 to 2026, see EELP’s [Clean Car Rules Regulatory Tracker page](#).

Multi-pollutant emissions standards for light-duty passenger cars, light trucks, and medium-duty vehicles

EPA’s proposed emissions standards for light-duty passenger cars, light trucks, and Class 2b and 3 vehicles (which EPA refers to as “medium-duty vehicles”) would establish more stringent emissions standards for GHG emissions, nonmethane organic gases plus nitrogen oxides (NMOG+NO_x), and particulate matter (PM) for model years 2027 through 2032. In addition to stronger emissions standards, EPA proposes certain programmatic changes, including altering some of the optional credit programs and adding durability and warranty provisions for both electrified vehicles and diesel engine-equipped vehicles.

In addition to the proposed emissions standards, EPA requests comment on three alternatives, listed in Table 1.

- Alternative 1 is more stringent than the proposal, with similar increases in stringency year over year as the proposal
- Alternative 2 is less stringent with similar increases in stringency year over year as the proposal

¹ Environmental Protection Agency, Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles (“Proposed Rule”), RIN 2060-AV49 (April 2023) at p. 38, <https://www.epa.gov/system/files/documents/2023-04/lmdv-multi-pollutant-emissions-my-2027-nprm-2023-04.pdf>.

² On April 12, EPA also proposed a GHG emissions standard for heavy-duty vehicles – Phase 3, which would establish a more stringent standard for heavy-duty vehicles for model year 2027 and extend the current program through model year 2032. The heavy-duty category applies to vocational vehicles (e.g., delivery trucks, transit vehicles, school buses) and tractors. EELP will track the rule on our [Clean Car Rules Regulatory Tracker page](#). EPA Environmental Protection Agency, Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles - Phase 3 (“Proposed Heavy-Duty Rule”), RIN 2060-AV50 (April 2023), <https://www.epa.gov/system/files/documents/2023-04/hd-ghg-veh-phase-3-nprm-2023-04.pdf>.



- Alternative 3 meets the same stringency as the proposed standards in model year 2032, but with a more consistent rate of stringency increase for the earlier years

By 2032, EPA projects that the proposed standards would lead to an average target for the light-duty fleet of 82 grams per mile of CO₂ – a 56 percent GHG emission reduction compared to 2026. For medium-duty vehicles, EPA projects an average target of 275 grams per mile of CO₂ by model year 2032 – a 44 percent GHG emission reduction from 2026. EPA estimates that the benefits of the rule will be considerable: the net benefits for 2027 through 2055 are \$1.6 trillion (3 percent discount rate) and \$850 billion (7 percent discount rate). The present value³ for climate benefits in the rule is \$83 billion to \$1.0 trillion, depending on the discount rate and social cost of GHGs applied. In 2032, EPA estimates that annual technology costs for manufacturers from the rule will be \$17 billion, which will increase vehicle prices; for consumers, the agency expects those higher prices to be offset by fuel savings and lower maintenance and repair costs.

While EPA makes clear that the proposed standards will spur adoption of zero-emissions electric vehicles (EVs), the agency also states that despite that expected shift, “many internal combustion engine (ICE) vehicles will continue to be sold during the time frame of the rule and will remain on the road for many years afterward.”⁴

Table 1. Comparing projections of average CO₂ grams per mile and fleetwide EV adoption for EPA’s current GHG standards, proposed GHG standards, and Alternatives 1, 2 and 3⁵

Model Year	Current EPA stds for CO ₂ (g/mile)	EPA projections for EV adoption under current stds	Proposed stds for CO ₂ (g/mile)	Proposed stds projections EV adoption	Alternative 1 for CO ₂ (g/mile)	Alternative 1 projections for EV adoption	Alternative 2 for CO ₂ (g/mile)	Alternative 2 projections for EV adoption	Alternative 3 for CO ₂ (g/mile)	Alternative 3 projections for EV adoption	No-action case projections for EV adoption
2023	199	7%									
2024	189	10%									
2025	180	14%									
2026	171	17%	152 (adjusted) ⁶		152 (adjusted)		152 (adjusted)		152 (adjusted)		
2027			134	36%	124	37%	144	33%	139	32%	27%
2028			116	45%	106	46%	126	40%	126	39%	32%
2029			99	55%	89	54%	108	52%	112	46%	37%
2030			91	60%	81	63%	100	55%	99	54%	40%
2031			82	63%	72	65%	92	59%	86	62%	40%
2032			73	67%	63	69%	83	64%	73	68%	39%

EPA’s light- and medium-duty vehicle proposal builds on statutory requirements, past rulemakings, and recent Congressional and industry actions

EPA explains that in setting the “scope, structure, and stringency” of the proposed light- and medium-duty standard, the agency took a range of factors into account, including its statutory authority, previous rulemakings, and evolving vehicle technologies. EPA notes that the proposal follows the agency’s “longstanding approach of establishing an appropriate and achievable trajectory of emissions reductions by means of performance-based standards” achievable with “feasible and available” technologies.⁷

³ Present value for 2027 for GHG reductions through 2055.

⁴ Proposed Rule at p. 13.

⁵ See Proposed Rule Tables 8, 80, 81, 96, 97, 98.

⁶ EPA explains that it adjusted the model year 2026 targets to reflect changes to the off-cycle and air conditioning credits in the proposal.

⁷ Proposed Rule at 15.



Statutory authority

CAA Section 202(a) authorizes EPA to prescribe “standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which ... cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.”⁸ When setting standards, EPA must consider timing, technology, and cost: “[a]ny regulation ... 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.”⁹ For some pollutants (including PM, NO_x, and carbon monoxide) from certain medium- and heavy-duty vehicles, EPA must set standards that reach the greatest degree of achievable emissions reduction considering cost, energy, and safety factors.¹⁰

In addition to EPA’s statutory authority under the CAA, the proposal discusses Congressional support for the transition to EVs demonstrated in the Inflation Reduction Act (IRA) and the Bipartisan Infrastructure Law (BIL) to underscore EPA’s authority to promulgate a rule that incorporates a robust transition to EVs. While EPA does not rely on these recently passed laws for legal authority in proposing the rule, the recent Congressional actions provide additional legal support for the agency’s approach.¹¹ EPA notes that the “IRA specifically affirms Congress’s previously articulated statements that non-ICE [internal combustion engine] technologies will be a key component of achieving emissions reductions from the mobile source sector, and Congress provided a number of significant financial incentives for PEVs [plug-in EVs] and the infrastructure necessary to support them.”¹² The agency adds that the “Congressional Record reflects that ‘Congress recognizes EPA’s longstanding authority under CAA section 202 to adopt standards that rely on zero emission technologies, and Congress expects that future EPA regulations will increasingly rely on and incentivize zero-emission vehicles as appropriate.’”¹³

Past rulemakings

EPA’s proposal follows the regulatory framework it has used in past rulemakings. EPA explains that the current proposal builds on the agency’s longstanding approach (over 50 years for criteria pollutants and over 10 years for GHGs) of “establishing numerically lower emissions standards based on continued advancements in emissions control technology that make it possible to achieve important emissions reductions at a reasonable cost.”¹⁴ Since 2010, EPA has used this approach to set GHG emissions standards for light- and medium-duty vehicles, including implementing a fleetwide averaging scheme and a banking and trading method of accounting for emissions. EPA finalized its most recent GHG emissions rule in 2021, which set standards consistent with EPA’s earlier approach after the Trump administration weakened the standards. (See Table 1’s “Current EPA standards.”) EPA’s most recent criteria pollutant standards were finalized in 2014 and designed to work in tandem with the GHG standards. We provide a [detailed history of the rulemaking process for GHG standards here](#).

Historic investments in electrification of the vehicle fleet

The auto industry is rapidly transitioning to EVs, and automakers are investing heavily in this transition. Many companies, including Ford and General Motors, have announced targets for EV production. (See Figure 1 below.) EPA notes that when it finalized the 2021 rule, the automotive industry had committed \$500 to 600 billion to EVs and more recent estimates are significantly higher—\$1.2 trillion. EPA also notes that the costs to produce and purchase EVs are falling. For example, battery costs decreased by 85 percent in the past decade; technology is improving as vehicle range and other capabilities improve; and consumer choice is growing as more models hit the

⁸ 42 U.S.C. § 7521(a)(1)

⁹ 42 U.S.C. § 7521(a)(2)

¹⁰ 42 U.S.C. § 7521(a)(3)

¹¹ Quoting Representative Frank Pallone, EPA explains that the IRA “‘reinforces the longstanding authority and responsibility of [EPA] to regulate GHGs as air pollutants under the Clean Air Act,’ and ‘the IRA clearly and deliberately instructs EPA to use’ this authority by ‘combin[ing] economic incentives to reduce climate pollution with regulatory drivers to spur greater reductions under EPA’s CAA authorities.’” Proposed Rule at pp. 147-148.

¹² Proposed Rule at pp. 147-148.

¹³ Proposed Rule at pp. 147-148.

¹⁴ Proposed Rule at pp. 38-39.



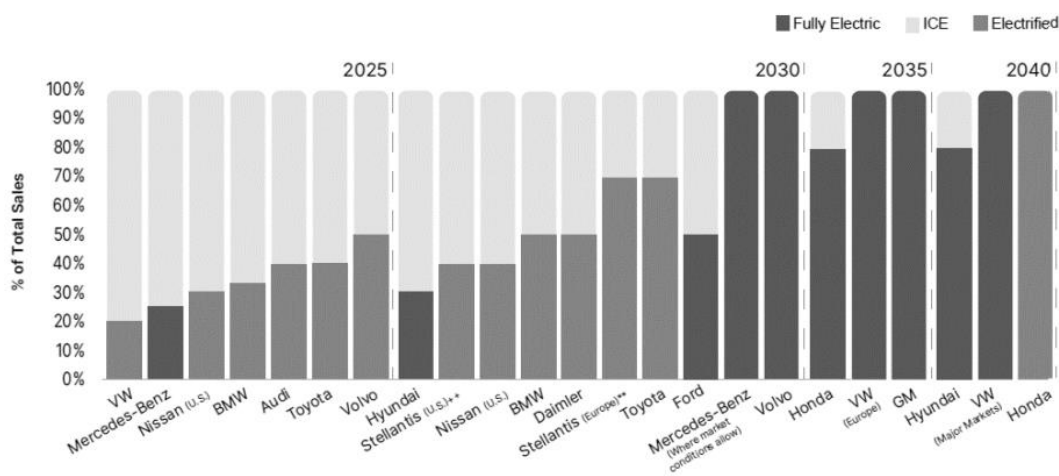
market. Additionally, EPA cites reports to highlight that the number of plug-in EV models available for sale in the US has more than doubled from about 24 in model year 2015 to about 60 in model year 2021.¹⁵ Recent announcements from auto manufacturers indicate that this number will increase to more than 80 models by model year 2023 and more than 180 models by 2025.¹⁶

EPA also describes the global shift to vehicle electrification to illustrate that automakers are making investments to meet customer demand. EPA cites at least 20 countries setting targets for shifting all new vehicle sales to zero-emissions vehicles, including Norway, Austria, India, Israel, Canada, the United Kingdom, and Germany. EPA states that the countries that have committed to 100 percent light-duty zero-emissions vehicle sales by 2035 represent over a quarter of the global vehicle market.

Additionally, EPA explains that these industry trends are accelerated by the IRA and BIL, both of which shift the baseline for EPA’s rulemaking by lowering costs and addressing certain barriers to increased EV deployment.¹⁷ For example, the IRA extends and expands commercial and individual EV tax credits and provides tax credits for battery manufacturing, while the BIL invests \$7.5 billion in EV charging infrastructure. Recent studies by Bloomberg New Energy Finance and the International Council on Clean Transportation and Energy Innovation suggest that current market trends, bolstered by IRA investments and incentives, will push EV penetration to roughly 50 percent of the US vehicle fleet by 2030.¹⁸

Taken together, EPA states that these trends “indicate that more stringent emissions standards are feasible at reasonable cost and would achieve significant improvements in public health and welfare,” and that adequately addressing the public health impacts of vehicle pollution necessitates “substantial additional reductions in criteria pollutants and GHG emissions from the transportation sector.”¹⁹

Figure 1.²⁰ This graph from Environmental Defense Fund (2022) shows future electrified and fully electric vehicle sales by manufacturer.



¹⁵ Proposed Rule at p. 22.

¹⁶ Proposed Rule at p. 22.

¹⁷ In its proposal, EPA notes that, “[t]hese 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 the rule. Proposed Rule at p. 34.

¹⁸ Proposed Rule at 19, citing Bloomberg New Energy Finance (BNEF), "Electric Vehicle Outlook 2022," Long term outlook economic transition scenario; International Council on Clean Transportation, "Analyzing the Impact of the Inflation Reduction Act on Electric Vehicle Uptake in the US," ICCT White Paper, January 2023. Available at <https://theicct.org/wpcontent/uploads/2023/01/ira-impact-evs-us-jan23.pdf>.

¹⁹ Proposed Rule at p. 10.

²⁰ Proposed Rule at p. 26.



Justification for availability of technology and feasibility of EPA’s proposed standards

In developing the proposed standards, EPA relies on its statutory obligations and adopts the same approach and analysis used in past rules by assessing technical feasibility, available lead time, compliance and consumer costs, and other factors. The agency states that its proposed light- and medium-duty vehicle standards are “consistent with EPA’s responsibilities under the CAA and appropriate under CAA section 202(a).”²¹ Specifically,

EPA has carefully considered the statutory factors, including technological feasibility and cost of the proposed standards and the available lead time for manufacturers to comply with them. Based on our analysis, it is our assessment that the proposed standards are appropriate and justified under section 202(a) of the CAA. Our analysis for this proposal supports the preliminary conclusion that the proposed standards are technologically feasible and that the costs of compliance for manufacturers would be reasonable. The proposed standards would result in significant reductions in emissions of criteria pollutants, GHGs, and air toxics, resulting in significant benefits for public health and welfare. We also estimate that the proposal would result in reduced vehicle operating costs for consumers and that the benefits of the proposed program would significantly exceed the costs.²²

This section considers each of those key factors.

Technological feasibility and lead time

As it has in past rules, the agency emphasizes technical feasibility and reasonable costs as important factors required by CAA Section 202(a). EPA explains that more stringent standards are feasible, with an “incremental phase-in” to 2032 standards to ensure sufficient lead time, and reasonable compliance costs for automakers that are in line with past rules. EPA also notes that the IRA facilitates increased market access to EVs. EPA states that prior to the passage of the IRA, auto manufacturers told the agency that while increasing the proportion of EVs in the fleet was technologically feasible, it was important to address consumer concerns, including charging infrastructure and costs, and manufacturing issues. Now, EPA highlights that the IRA’s consumer and battery manufacturing tax credits, in addition to the BIL’s investments in charging infrastructure and focus on domestic sourcing and production, are addressing many of those concerns.

EPA states that for this set of proposed standards, unlike some past vehicle emissions rules, the necessary technology exists, is demonstrated, and is being produced. EPA notes that the widespread availability of the technology modeled in this rule stands in contrast to the technology-forcing role EPA has relied on in prior rulemakings when technologies were not as readily available to meet the proposed standards.²³

EPA also explains that in setting proposed standards, it weighs the “benefits to public health and welfare” against “potential constraints, such as costs, raw material availability, component supplies, redesign cycles, infrastructure, and consumer acceptance” to conclude that such constraints have “diminished significantly” since the 2021 rule.²⁴ EPA cites the “increased investment by automakers, increased acceptance by consumers, and significant support from Congress to address such areas as upfront purchase price, charging infrastructure, critical mineral supplies, and domestic supply chain manufacturing.”²⁵ EPA further explains that despite these favorable conditions, EPA’s proposal accounts for redesign limits and limited battery production in its modeling to ensure sufficient lead time for industry and account for potentially slow customer acceptance of EVs as compared to internal combustion engine vehicles in the near term. On this latter point, EPA explains that “the model anticipates that consumers will in the

²¹ Proposed Rule at p. 14.

²² Proposed Rule at p. 14.

²³ Proposed Rule at pp. 144-146.

²⁴ Proposed Rule at p. 440.

²⁵ Proposed Rule at p. 440.



near term tend to favor ICE [internal combustion engine] vehicles over PEVs when two vehicles are comparable in cost and capability.”²⁶

Emissions reductions and public health benefits

In determining the proposed standards, EPA considered the associated reductions in GHGs, criteria pollutants, and air toxics and the resulting health and welfare impacts. With the proposed standards, EPA estimates a reduction of 7,400 million metric tons (MMT) of CO₂, 0.12 MMT of methane (CH₄), and 0.13 MMT of nitrous oxide (N₂O) by 2055. CO₂ would be reduced 26 percent relative to the no-action scenario.²⁷ By 2055, EPA also projects a 35 percent to 40 percent reductions in PM_{2.5}, NO_x, and SO_x emissions and over 40 percent reduction in volatile organic compound (VOC) emissions.²⁸ EPA estimates the climate benefits of the proposal to be between \$83 billion and \$1.0 trillion (using a range of discount rates and values for the social cost of greenhouse gases),²⁹ and the value of PM_{2.5}-related benefits to be between \$64 billion and \$290 billion, depending on the discount rate and different PM-related studies.³⁰ EPA notes that while it sets these standards based on its statutory obligation under CAA Section 202(a), not the outcomes of cost-benefit analysis, the significant estimated net benefits “reinforce ... our view that the proposed standards are appropriate under section 202(a).”³¹

Cost to industry

EPA estimates that the costs for manufacturers to meet the proposed standards are consistent with prior rules at roughly \$1,200 (2020 dollars) per vehicle in model year 2032. EPA states that federal investments in electrification ensure that the proposal and the increased marginal cost per vehicle will not cause economic harm to the auto industry. EPA concludes that these estimated compliance costs are “reasonable and consistent with those in past GHG rules” while driving larger reductions in GHG and criteria pollutant emissions.³²

Compliance flexibility

In addition to providing adequate lead time for industry, EPA explains the compliance flexibility proposed. First, consistent with prior rules, EPA notes that the performance-based standards do not mandate any particular technology and thus industry has the flexibility to choose how to comply. This includes choosing different technologies than those projected in EPA’s modeling (such as higher efficiency internal combustion engine vehicles and fewer EVs). Automakers also can use averaging, banking, and trading of over-compliance credits. This credit program, consistent with past EPA mobile source rules starting in the 1980s, allows individual automakers compliance flexibility while ensuring the industry achieves the emission objectives of the rule. EPA states that the 2022 EPA Trends Report provides additional evidence of the importance of credit trading as a compliance strategy. Since 2012, EPA reports an “active market,” with nine manufacturers selling credits, 13 manufacturers purchasing credits, and roughly 100 credit trades.³³

Impact to consumers

EPA estimates that the benefits of the lower operating costs for consumers that would result from the standards will offset increased vehicle technology cost, even without accounting for the incentives in the IRA.³⁴ When considering the effects of the proposal on low-income consumers, EPA expects that manufacturers will continue to offer a range of vehicles at different prices—including internal combustion engine models—and that the reduced fuel and

²⁶ Proposed Rule at p. 441.

²⁷ Environmental Protection Agency, Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles Draft Regulatory Impact Analysis (“DRIA”), EPA-420-D-23-003, Section VI and Chapter 9 (April 2023), <https://www.epa.gov/system/files/documents/2023-04/420d23003.pdf>.

²⁸ See DRIA Section VII and Chapter 9

²⁹ See DRIA Section VIII and Chapter 10

³⁰ See DRIA Section VIII

³¹ Proposed Rule at p. 449.

³² Proposed Rule at p. 448.

³³ See 2022 EPA Automotive Trends Report, ES-13, <https://www.epa.gov/system/files/documents/2022-12/420s22001.pdf>.

³⁴ See DRIA VIII.B and VIII.F and Chapter 10



maintenance costs on EVs, including used EVs, would result in savings. EPA estimates total fuel savings for consumers through 2055 at \$280 to \$580 billion.

Energy consumption, energy security, and safety

Based on its consideration of the impact of the standards on energy consumption, energy security, and safety, EPA concludes that the reduced gasoline consumption of 950 billion gallons through 2055³⁵ would reduce financial and strategic risks related to petroleum supply disruptions and increase US energy security. EPA projects the impact of this energy security benefit at \$21 billion to \$42 billion through 2055, depending on the discount rate.³⁶ Based on its consideration of the proposed standards' safety impacts, including roadway safety and public health impacts from pollution reduction, EPA recognizes the possibility of the "personal decision by consumers to drive more due to the reduced cost of driving" but anticipates a non-statistically significant increase in fatalities.³⁷ On the other hand, EPA finds that reductions in air pollution will avoid premature deaths.

New battery durability and warranty provisions

To ensure that vehicle emissions standards are met, EPA explains that in past rulemakings it required manufacturers of internal combustion engine vehicles to demonstrate the durability of engines and emission control systems and set warranty requirements for emission control components. As more vehicles in the fleet shift to electric, battery reliability is increasingly key to achieving projected emissions reductions. EPA, therefore, proposes to set battery durability requirements, with onboard battery health monitoring and additional manufacturer vehicle testing, along with reporting requirements to show that vehicles are meeting the durability standards. EPA also proposes emission control warranty provisions for batteries.

Modeling incorporates new legislation and changing market conditions

EPA explains that its new technical assessment for the proposed and alternative standards is "consistent with our prior rulemakings" for these pollutants and classes of vehicles and draws on the "extensive body of technical work" underlying those earlier rules.³⁸ However, EPA also states that changing conditions, including declining battery costs and new EV models, make it easier to "characterize the cost and performance of best-practice designs."³⁹ In addition, EPA notes that "[n]ew legislation also has provided significant incentives for both the manufacture and purchase of PEVs, and the expansion of charging infrastructure," and that "in light of the projected levels of electrification anticipated under the proposed standards, EPA's new technical assessment contains significantly increased focus on the availability of critical minerals, supply chain development, battery manufacturing capacity, and mineral security."⁴⁰

EPA relies on the Optimization Model for reducing Emissions of Greenhouse gases from Automobiles (OMEGA)⁴¹ to model vehicle manufacturer compliance with GHG standards, which was also used in past GHG rules. The model incorporates new features including a "representation of consumer-producer interactions when modeling pathways and the associated technology penetration into the vehicle fleet," which "allows [EPA] to project the impacts of the producer and consumer incentives contained in the IRA and BIL legislation."⁴² EPA requests comment on the data underlying these models and other issues related to its modeling approach.

Next steps for EPA's proposal

EPA requests comments on all aspects of the proposal, including the proposed and alternative standards. Comments about the pace and design of the standards will help EPA finalize a rule that reflects information about the feasibility, cost, and other factors that inform EPA's analysis under CAA Section 202(a).

³⁵ See DRIA Chapter 9

³⁶ See DRIA Chapter 10.

³⁷ Proposed Rule at p. 452.

³⁸ Proposed Rule at p. 331.

³⁹ Proposed Rule at p. 331.

⁴⁰ Proposed Rule at p. 331.

⁴¹ See DRIA Chapter 2.2.

⁴² Proposed Rule at p. 322.



Regardless of its final form, we expect legal challenges to the light- and medium-duty vehicle proposal once it is finalized. Depending on timing, the pending DC Circuit challenge to EPA's 2021 GHG standards in *Texas v. EPA* could shape the contours of the rule or future litigation.⁴³ Oral argument in that case is scheduled for September 2023.

While future litigation will depend on the details of the final rule, *Texas v. EPA* offers insight into the issues that opponents of the rule are likely to raise. In that case, the 16 state petitioners, led by Texas, focus on the major questions doctrine, asserting that the 2021 rule for model years 2023 to 2026 is invalid because it will have adverse effects on grid reliability due to increased energy demand from EV charging. The petitioners also allege adverse effects on national security that implicate a major question because of minerals or components that may be sourced outside the US, for example Chinese-produced lithium-ion batteries or other key EV inputs. In addition, petitioners argue that EPA's social cost of greenhouse gases estimates are arbitrary and capricious under the Administrative Procedure Act.

The private petitioners—a group of fuel companies, corn and soybean grower associations, and conservative think tanks—argue that EPA must show clear Congressional authorization to “force electrification”; that the rule is akin to the Clean Power Plan struck down in *West Virginia v. EPA* in its approach to “restructuring” the auto market; and that the rule is invalid under the major questions doctrine. The private petitioners also argue that EPA may not use fleetwide averaging in setting standards, and that the rule is arbitrary and capricious for its approach to calculating emissions from EVs and its cost-benefit analysis.

Recognizing that opponents of more stringent standards are likely to raise similar objections, EPA's new proposal discusses how the agency considered potential grid reliability and national security impacts with greater deployment of EVs. EPA also requests comments to ensure that it has the data and other information needed to promulgate a sound final rule. On grid reliability, EPA indicates that it has worked with other federal agencies, including the Federal Energy Regulatory Commission and the Department of Energy, and key stakeholders like the Electric Power Research Institute, to assess the potential impacts of increased vehicle electrification on the grid. The agency explains that it projects the additional generation necessary to meet the greater number of EVs anticipated by the proposal to be “relatively modest compared to the No Action case, ranging from less than 0.4 percent in 2030 to approximately 4 percent in 2050.” EPA also puts this potential increase in context by noting that “U.S. electricity end use between the years 1992 and 2021 increased by around 25% without any adverse effects on electric grid reliability or electricity generation capacity shortages.”⁴⁴

EPA also describes its analysis of the impact of critical minerals and other sourcing issues on national security. The agency explains that domestic mineral production is already ramping up, that it expects domestic supply of these minerals to continue to expand, and that Congressional investments will spur those efforts.⁴⁵ And as noted above, EPA calculates that the decreased dependency on petroleum resulting from the proposal could lead to energy security benefits estimated at \$21 billion to \$42 billion through 2055.⁴⁶

EPA asks for comment on how a range of inputs into its modeling and analysis can be improved, including cost inputs for EV technology; mineral, battery, component, and infrastructure costs; constraints on the model such as supply chain or customer uptake issues; and its cost-benefit analysis. Stakeholder comments and supporting data will help EPA finalize a rule that is based on a robust regulatory record.

Following publication in the Federal Register, the comment period will be open for 60 days.

⁴³ *State of Texas, et al v. EPA, et al*, Docket No. 22-01031 (D.C. Cir. Feb 28, 2022).

⁴⁴ Proposed Rule at p. 375. EPA also notes that past demands on the grid, including the widespread adoption of air conditioning in the 1960s and 1970s and the recent demand from data centers and server farms demonstrate the grid's capacity to adapt to new demands. Proposed Rule at p. 377.

⁴⁵ Proposed Rule at p. 382-383.

⁴⁶ See DRIA Chapter 10.