September 22, 2025

The Honorable Lee Zeldin
Administrator
U.S. Environmental Protection Agency (EPA)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Prime Mover Institute's Comment on EPA's *Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards*, 90 Fed. Reg. 36,288 (Aug. 1, 2025), Docket No. EPA-HQ-OAR-2025-0194

Dear Administrator Zeldin:

The Prime Mover Institute is a public interest organization dedicated to advancing energy dominance in America. We work with coalition partners to engage in rulemaking processes with technical information and legal arguments, calling attention to the effects regulation has on citizens, the grid, personal transport and mobility, and the rule of law.

The main obstacle to energy dominance is what Robert Bryce calls the "anti-industry industry," the non-profits and lawyers dedicated to defending the status quo. These groups use litigation, regulatory comments, and intimidation to forestall change.

From Day 1, you have taken on these interests. This proposed rule shows that. Now it is the turn of advocates of energy dominance to show up and defend their ideas. In the words of Vaclav Smil, "prime movers are energy converters able to produce kinetic (mechanical) energy in forms suitable for human uses." In the same way, Prime Mover Institute helps convert insight into action.

Thank you for the opportunity to comment.

Respectfully submitted,

/Russell Greene/
Russell Greene
Managing Director
Prime Mover Institute

INTRODUCTION

Internal-combustion engines are essential to the transportation sector. The spark-ignition car, fueled by gasoline, transformed American life, enabling freedom of mobility like never before. Similarly, compression-ignition trucks powered by energy-dense diesel have "profound socioeconomic consequences."[1] They are the "backbone of food deliveries, as well as a key link in the distribution of industrial parts and manufactured goods."[2] Motor vehicles—and the prosperity they unlock—are virtually all powered by internal-combustion engines that rely upon abundant, energy-dense, liquid fuels.

Although these prime movers are essential to modern economic life, they are threatened by misguided policies. In the United States, these efforts culminated in the Biden Administration's "whole-of-government" plan to phase out the internal-combustion engine from the Nation's roads. To carry that plan, EPA turned to Section 202(a) of the Clean Air Act. Specifically, the Biden EPA set carbon-dioxide standards for new motor vehicles that internal-combustion motor vehicles cannot meet. Under the Biden EPA's regulations, roughly 70% of new passenger cars and light trucks and nearly half of new heavy-duty trucks would have to be plug-in electric vehicles by model year 2032. In other words, the market share of new internal-combustion motor vehicles must plummet under the final rules. EPA's plan to end the internal-combustion engine would be disastrous. To meet the standards, given flagging demand for battery-electric motor vehicles, manufacturers would have to reduce sales of new internal-combustion motor vehicles, leading to shortages and price hikes similar to the ones California is already experiencing in the market for heavy-duty vehicles.

EPA now proposes to reconsider the 2009 "Endangerment Finding" for greenhouse gas emissions from new motor vehicles. EPA accordingly proposes to repeal *all* greenhouse gas standards promulgated under Section 202(a) of the Clean Air Act. The Prime Mover Institute supports the Proposed Rule and urges the EPA to adopt the primary legal rationale, the alternative scientific rationale, and the separate bases for repeal, as detailed in our comments below. Prime Mover Institute, however, also urges EPA to freeze the carbon-dioxide standards at model year 2026 as a backup alternative. A belt-and-suspenders approach will give a final rule the best chance of withstanding legal scrutiny and avoiding the serious economic dislocations the Biden EPA rules would otherwise cause.

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[1] Vaclav Smil, *Energy and Civilization* 331 (2017).

[2] *Id.*

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BACKGROUND

Title II of the Clean Air Act establishes a comprehensive scheme for regulating motor vehicle emissions. Section 202(a) directs the EPA Administrator to "by regulation prescribe (and from time to time revise) … 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."[3]

From 1970 until 2009, EPA used Section 202(a) to address emissions that contribute to *ambient* air pollution, such as nitrogen dioxide, non-methane organic gases, and particulate matter. Section 202 contains numerous references to these traditional ambient air pollutants but does not mention greenhouse gases in a regulatory context.

Nevertheless, in *Massachusetts v. EPA*, the Supreme Court read the Clean Air Act as extending EPA's regulatory reach to cover greenhouse gases, at least for purposes of regulating emissions from motor vehicles under Section 202(a).[4] The Supreme Court held in *Massachusetts* that greenhouse gases are an "air pollutant" under the Clean Air Act's general definition of the term air pollutant,[5] and in the context of Section 202(a), and rejected contrary arguments that this violated the major-questions doctrine under *Brown & Williamson Tobacco* and would conflict with the Department of Transportation (DOT)'s fuel-efficiency standards for automobiles.[6]

After *Massachusetts*, EPA published the "Endangerment Finding" in 2009, the legal predicate for all later motor vehicle greenhouse gas (GHG) regulations.[7] The agency determined that a group of six "well-mixed greenhouse gases"—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—are "air pollution" that endangers the public health and welfare through their contribution to global climate change.[8] EPA further found that GHG emissions from all classes of U.S. on-road motor vehicles "cause or contribute" to that dangerous air pollution, basing this conclusion in part on the fact that at the time U.S. on-road motor vehicles emitted "about 4 percent of total global well-mixed greenhouse

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[3] 42 U.S.C. § 7521(a)(1).

[4] 549 U.S. 497 (2007).

[5] 42 U.S.C. § 7602(g).

[6] 549 U.S. at 529–31 (citing *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120 (2000)).

[7] 74 Fed. Reg. 66,496 (Dec. 15, 2009) (Endangerment Finding).

[8] *Id.*

gas emissions."[9] The finding was upheld by the U.S. Court of Appeals for D.C. Circuit in *Coalition for Responsible Regulation v. EPA*.[10] Since then, EPA has reaffirmed the Endangerment Finding for GHGs several times and extended it to other sources such as aircraft engines under a different section of the Clean Air Act.[11]

The Endangerment Finding empowered EPA to regulate carbon-dioxide emissions from motor vehicles for the first time in the agency's forty-year history. For a decade, however, EPA's carbon-dioxide tailpipe standards overlapped with DOT's fuel-efficiency standards, and the two agencies engaged in joint rulemakings. During this era of purported regulatory alignment, EPA and NHTSA promulgated joint, overlapping fuel-efficiency and carbon-dioxide targets for model year 2012–2026 and later light-duty vehicles and for model year 2014–2027 and later medium- and heavy-duty vehicles.[12] Manufacturers could comply with these standards by making marginal improvements in the efficiency of gasoline- or diesel-fueled motor vehicles, such as downsizing engines, adopting direct injection, improving aerodynamic efficiency, and adopting more efficient continuously variable transmissions.

To regulate carbon-dioxide emissions, EPA has relied upon a fleetwide averaging, banking, and trading (ABT) program similar to (although not identical to) the one Congress authorized for DOT's fuel-efficiency regulations applicable to automobiles.[13] For purposes of compliance with the carbon-dioxide standards, EPA treats electric vehicles (EVs) as producing "zero grams" of carbon dioxide per mile—ignoring emissions from electricity generation used to power these vehicles as well as emissions during battery manufacturing.[14] By using an ABT program and assuming that EVs have zero emissions, EPA thus created a powerful "incentive" to make EVs.[15] But although the joint EPA/DOT standards encouraged EVs, EVs were a "flexibility," not a mandate. After all, DOT may not consider EVs at all when setting fuel-efficiency standards for automobiles, even though EVs must be included when calculating a manufacturer's average fuel

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[9] *Id.* at 66,499.

[10] 684 F.3d 102 (D.C. Cir. 2012).

[11] *See, e.g.*, 81 Fed. Reg. 54,422, 54,424 (Aug. 15, 2016).

[12] *See* 75 Fed. Reg. 25,324 (May 7, 2010) (light-duty vehicles); 77 Fed. Reg. 62,624 (Oct. 15, 2012) (light-duty vehicles); 76 Fed. Reg. 57,106 (Sept. 15, 2011) (heavy-duty vehicles); 81 Fed. Reg. 73,478 (Oct. 25, 2016) (heavy-duty vehicles).

[13] *See, e.g.*, 40 C.F.R. §§ 86.1818-12(c), 86.1819-14(a), (k)(4), 86.1865-12(i)(1), 1037.105.

[14] *Id.* §§ 86.1866-12(a), 1037.615(f).

[15] 75 Fed. Reg. at 25,435.

economy performance.[16] It is therefore impossible for EPA to both harmonize its standards with DOT's and to mandate the sale of EVs.

The Biden Administration, however, leveraged these flexibilities to mandate EVs, shattering any pretense of regulatory harmony between DOT and EPA. In August 2021, President Biden issued an Executive Order declaring that "America must lead the world on clean and efficient cars and trucks."[17] "That means," President Biden said, the country's "goal" should be "that 50 percent of all new passenger cars and light trucks sold in 2030 be zero-emission vehicles, including battery electric, plug-in hybrid electric, or fuel cell electric vehicles."[18]

To achieve that goal, the Biden EPA abandoned its role as a joint fuel economy regulator and used Section 202(a) to order a transition to EVs. EPA reverse engineered a *de facto* EV mandate by promulgating vehicle carbon-dioxide targets so stringent that fleets made up solely of gasoline and diesel vehicles cannot meet them. This forces manufacturers to produce EVs—treated as having zero emissions for the purpose of compliance—to offset the deficits generated by other motor vehicles.[19]

The Biden EPA carbon-dioxide standards applied to model year 2027 and later motor vehicles. By model year 2032, EPA projected in its "central" case that the standards would result in 70% of new light-duty vehicles being EVs (up from less than 10% in 2024) and roughly 45% of new medium- and heavy-duty vehicles being EVs (up from near zero today).[20] The estimated cost is extraordinary. The Biden EPA projected approximately $900 billion in compliance costs through 2055 merely for the light- and medium-duty vehicle standards, the most expensive regulation in U.S. history.[21] This price tag is an underestimate: EPA's regulatory impact analysis rested upon a wildly optimistic baseline level of EV sales encouraged by the since-repealed tax credits and state-

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[16] 49 U.S.C. §§ 32902(h), 32904(a).

[17] Exec. Order No. 14,037, § 1, 86 Fed. Reg. 43,583, 43,583 (Aug. 10, 2021).

[18] *Id.*

[19] *See* Attached Ex. A & Ex. B (expert declarations explaining that the standards are de facto EV mandates).

[20] *See* 89 Fed. Reg. 27,842, 28,057 (Apr. 18, 2024) (light- and medium-duty vehicle standards); 89 Fed. Reg. 29,440, 29,443, 29,455 (Apr. 22, 2024) (heavy-duty vehicle standards).

[21] 89 Fed. Reg. at 28,105, 29,455.

level EV mandates that Congress has disapproved. Even using the Biden EPA's flawed model and assumptions, the predicted cost now would be $1.4 trillion. [22]

The Biden EPA's fundamental disconnect from commercial realities in the market for new motor vehicles is highlighted by current market conditions; despite large fiscal and regulatory subsidies, EVs accounted for just 9.6% of new passenger car and light-truck sales in the first quarter of 2025, roughly one seventh of what the 2024 Rule demands in just a few years.[23] In the heavy-duty sector, EV sales are even further behind the Biden EPA's targets, and the few EVs produced have been manufactured in response to now-illegal state mandates. In 2024, new Class 4 through 6 EVs amounted to only 0.24% of total truck registrations in those classes, while new Class 7 through 8 EVs accounted for only 0.40% of total truck registrations in those classes.[24] That EV market share is nowhere near the unreasonable EV market-share targets required to meet the heavy-duty carbon-dioxide standards, which begin in model year 2027, or as early as January of the 2026 calendar year.[25] The standards may only be met by significantly raising motor vehicle prices and depressing sales of internal-combustion motor vehicles, as has happened in California, which has already experienced supply disruptions and ballooning prices in the market for heavy-duty vehicles as its regulations collide with reality.[26]

Despite all the expense, fanfare, and propaganda, EPA's sixteen-year experiment with new motor vehicle GHG regulation has failed to meaningfully reduce the risk of climate change (or for that matter, to inspire any serious foreign action). Global GHG emissions have continued to rise—from roughly 49 billion metric tons of carbon dioxide equivalent in 2009 to 57 billion metric tons in 2022—driven entirely by emissions from foreign countries.[27] The reason is simple: Global energy demand continues to grow, and fossil fuels with it. Humans use 574 exajoules of energy a

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[22] Draft Regulatory Impact Analysis 22, EPA-HQ-OAR-2025-0194-0086 (DRIA).

[23] All. for Auto. Innovation, *Get Connected, Electric Vehicle Quarterly Report* (First Quarter 2025), https://perma.cc/2EVS-8NUN.

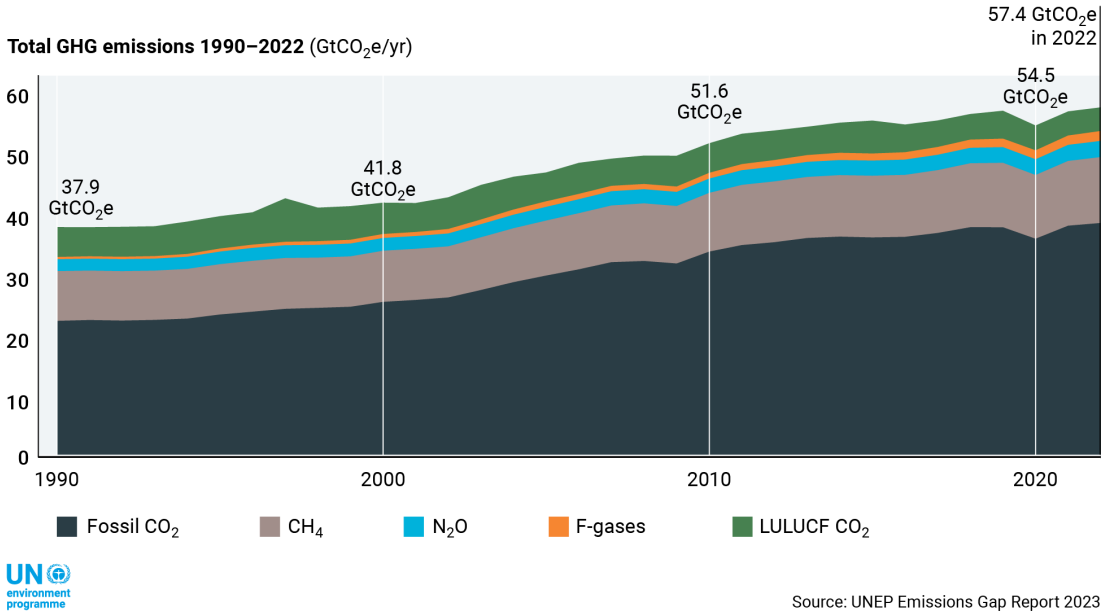
[24] Ilma Fadhil & Yihao Zie, *Race to Zero: Zero-Emission Bus and Truck Market in the United States*, ICCT (June 24, 2025), https://theicct.org/publication/r2z-zero-emission-bus-and-truck-market-us-2024-jun25/.

[25] *See* 89 Fed. Reg. at 29,452, tbl. ES-3.

[26] *See* Daimler Comments on Proposed Amendments to ACT Regulation and the Zero-Emission Powertrain Certification Test Procedure (July 14, 2025), https://perma.cc/563L-ZQ7E.

[27] *Emissions Gap Report 2023*, UN Environment Programme (2023), https://www.unep.org/resources/emissions-gap-report-2023.

year—and four-fifths of that energy comes from fossil fuels.[28] Fossil fuels, predominantly oil and natural gas, have provided 76% of the added energy since 2010.[29] As William Nordhaus has put it: "Why in the world do we use this vast quantity of fossil fuels? We use it to drive, to fly, to heat our houses and schools, to run our computers, and for everything we do."[30] Continued improvements in global prosperity go hand in hand with continued increases in global energy abundance, and hence, for the foreseeable future, increases in fossil fuels.



Total Global GHG Emissions 1990–2022.[31]

But EPA has failed even to reduce domestic on-road motor vehicle emissions. Total GHG emissions from the U.S. transportation sector have *increased* since the Endangerment Finding was published in 2009, rising from 1,789 million metric tons of carbon-dioxide-equivalent emissions in 2009 to 1,801 million metric tons in 2022.[32] More relevant to Section 202(a), total carbon-dioxide emissions from domestic on-road motor vehicles have not fallen since the

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[28] Liberty Energy, *Bettering Human Lives* 41 (2024), https://perma.cc/M2TD-756F.

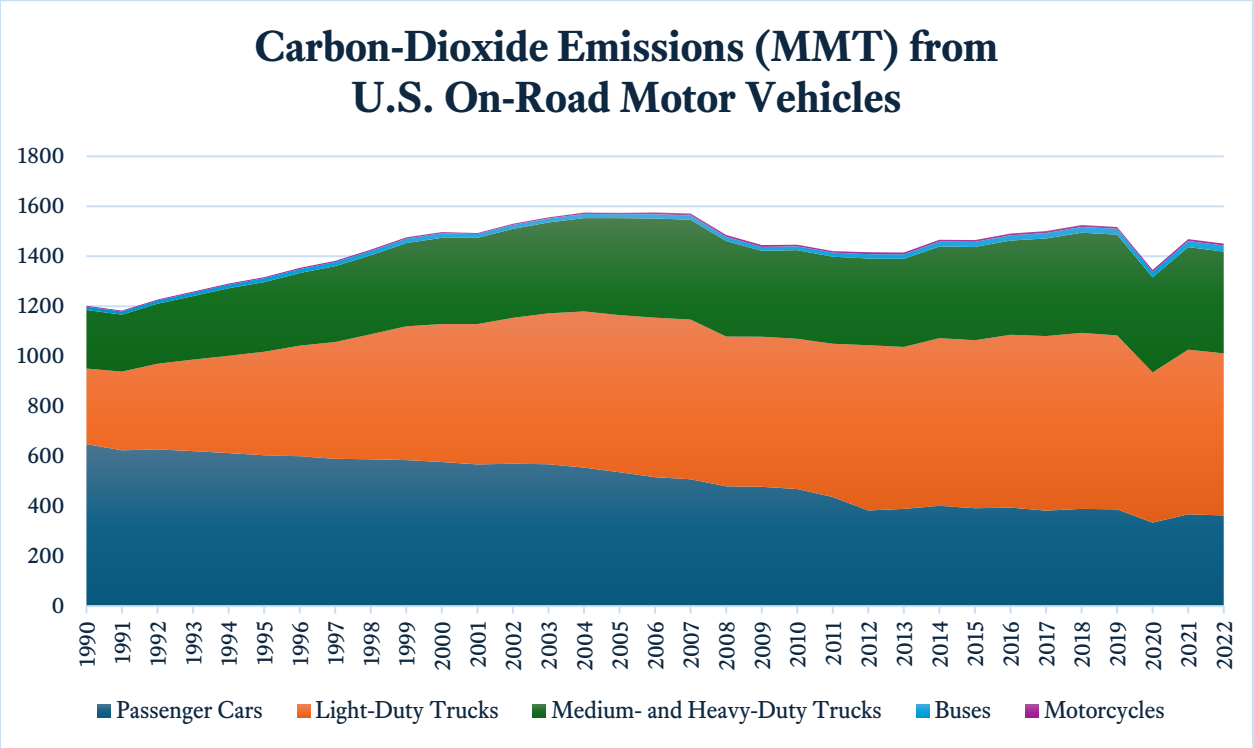
[29] *Id.* at 42.

[30] Williams Nordhaus, The Climate Casino 20 (2013).

[31] *Emissions Gap Report 2023*, UN Environment Programme (2023), https://www.unep.org/resources/emissions-gap-report-2023.

[32] *See* EPA, *Greenhouse Gas Inventory Data Explorer: Transportation*, https://cfpub.epa.gov/ghgdata/inventoryexplorer (last accessed Sep. 11, 2025); *see also* EPA, Global Greenhouse Gas Overview, EPA-HQ-OAR-2025-0194-0007.

Endangerment Finding in 2009.[33] Carbon-dioxide emissions from all on-road motor vehicles in 2009 were 1,445 MMT, whereas emissions today are 1,450 MMT, a net increase.[34]



Carbon-Dioxide Emissions from U.S. On-Road Motor Vehicles, 1990–2022.[35]

This failure reflects the downsides of Section 202(a) and fuel-efficiency regimes generally that make them cost-ineffective as tools to reduce greenhouse gases. First, Section 202(a) applies only to new motor vehicles, and thus the effects of regulation take an exceedingly long time to fully materialize, as the fleet turns over every 10 to 15 years. Second, by raising upfront costs, new motor vehicle regulation delays the turnover of the fleet, thus offsetting avoided greenhouse gas

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[33] EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2022, Annex 3 – Part A, Table A-90.

[34] Although passenger car carbon-dioxide emissions have fallen, that decline largely reflects a shift to more lightly regulated SUVs classified as light trucks. *See* The 2023 EPA Automotive Trends Report 17, Fig. 3.2; *see also id.* at 18 ("The truck regulatory class (including pickups, minivan/vans, and truck SUVs) has increased production share every year for the last decade, increasing from 36% to 63% of all new vehicle production.").

[35] *See* EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2022, Annex 3 – Part A, Table A-90.

emissions, the so-called "Gruenspecht" effect.[36] Third, by encouraging more efficient motor vehicles, the rules make it cheaper to drive more, so the regulations increase vehicle miles traveled through the "rebound" effect, again offsetting avoided greenhouse gas emissions. Fourth, because the regulations apply only to emissions from motor vehicles at the tailpipe, the rules encourage manufacturers to shift greenhouse gas emissions to the more lightly regulated economic sector of electricity generation, again offsetting avoided emissions. That is why economists following ordinary economic principles have typically concluded that sectoral fuel-efficiency regulations are not a cost-effective means of reducing carbon dioxide.[37]

To mask this policy ineffectiveness, EPA has engaged in econometric malpractice for over a decade. EPA has assumed, with weak evidence, severe consumer myopia in the market for new motor vehicles to project enormous fuel saving benefits for drivers, has projected unrealistically low "indirect" manufacturer compliance costs, especially in quantifying the capital and marketing investments needed to transition consumers to EVs, has ignored opportunity costs for drivers, and has assumed enormous *global* social benefits attributable to each ton of carbon avoided using a spurious and highly manipulable social cost of carbon model.[38]

Although EPA's standards have not reduced motor vehicle carbon-dioxide emissions, "the appropriate comparison … is between the world with more stringent [carbon-dioxide] standards and the world with less stringent standards.[39] Defenders of EPA might argue that total emissions could have been higher in the absence of EPA's regulations. But that too is largely wrong. Until at

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[36] *See* Howard Gruenspecht, *Differentiated Regulation: The Case of Auto Emissions Standards*, 72 Am. Econ. Rev. 328 (1982).

[37] *See generally* Valerie J. Karplus et al., *Should a vehicle fuel economy standard be combined with an economy-wide greenhouse gas emissions constraint? Implications for energy and climate policy in the United States*, 36 Energy Econ. 322, 327 (Mar. 2013); William Nordhaus, The Climate Casino 262–63 (2013); s*ee* The Council of Economic Advisers (Dec. 2020), EPA-HQ-OAR-2025-0194-0057 ($86 per ton cost through 2012–16 exceeds the benefit per ton).

[38] *See* David Friedman, *Critique of "Comprehensive Evidence Implies a Higher Social Cost of CO_2"* (July 30, 2023), criticizing Kevin Rennert et al., *Comprehensive Evidence Implies a Higher Social Cost of CO_2*, 610 Nature 687 (2012); Meghan R. Busse et al., *Are Consumers Myopic? Evidence from New and Used Car Purchases*, 103 Am. Econ. Rev. 220 (2013), EPA-HQ-OAR-2025-0194-0030; Benjamin Leard et al, *How Much Do Consumers Value Fuel Economy and Performance? Evidence from Technology Adoption*, 105 The Review of Econ. & Statistics 158 (Jan. 2023), EPA-HQ-OAR-2025-0194-0040; Noah Kaufman, *The Social Cost of Carbon is Gone—and That May Be Good News for Future US Climate Policy*, Columbia Ctr. On Global Energy Pol'y (July 23, 2025), https://www.energypolicy.columbia.edu/the-social-cost-of-carbon-is-gone-and-that-may-be-good-news-for-future-us-climate-policy/; DRIA at 12–19.

[39] *Competitive Enter. Inst. v. NHTSA*, 956 F.2d 321, 325 (D.C. Cir. 1992).

least model year 2026, EPA's standards have been harmonized with NHTSA's fuel-efficiency rules, so EPA's carbon-dioxide standards to date have been largely symbolic, adding compliance burdens, but doing little or nothing to incrementally reduce carbon-dioxide emissions from the transportation sector. But regardless, as discussed below, *supra* 2.3, even the Biden EPA's departure from harmonized standards would have done nothing meaningful to reduce GHG concentrations and the resulting warming.

It is within this context of statutory conflict, regulatory overreach, and manifest policy failure that EPA now reconsiders a program built on flawed legal and factual premises.

SUMMARY OF ARGUMENT

EPA's primary alternative is correct: Section 202(a) doesn't authorize EPA to regulate GHG emissions from motor vehicles. A contrary reading conflicts with the best reading of the text, structure, context, and history of Section 202(a), as well as the major-questions doctrine. Allowing EPA to regulate carbon-dioxide emissions also renders the Nation's fuel-efficiency law for automobiles surplusage, as the Department of Transportation may not consider EVs when setting standards for automobiles, while EPA has at least claimed that the Clean Air Act imposes no such restriction.

EPA in any event may lawfully find that GHGs from motor vehicles don't cause or contribute to air pollution that is reasonably anticipated to harm human health or welfare. As an initial matter, the basis for the 2009 Endangerment Finding has evaporated. The Endangerment Finding relied upon flawed models that significantly overpredicted expected future warming, and hence the risks of climate change to the United States. EPA's climate predictions have been further undermined by the observational record gathered to date, which contradicts EPA's dramatic claims. And the 2009 Endangerment Finding improperly ignored human adaptation and wrongly downplayed the benefits of warming, including avoided cold-related deaths from a warmer climate and the effects of carbon dioxide on crop yields and plant fertility. In the meantime, the contribution of U.S. motor vehicles to global greenhouse gas emissions has continued declining at a rapid pace as foreign emissions have grown. Because domestic emissions from new motor vehicles have no statistically discernable effect on climate change, EPA may conclude on this record that domestic new motor vehicles don't contribute to any increased risk of endangerment. They don't move the needle. The Clean Air Act doesn't authorize EPA to engage in symbolic regulation to inspire foreign leaders. Further, any risk is far in the future and not reasonably anticipated to occur during the useful life of new motor vehicles, making an Endangerment Finding improper and speculative.

EPA may also repeal the current GHG regulations by relying upon alternative bases, and relying upon multiple grounds is prudent because it would reduce the risk of judicial reversal and provide the most certainty to regulated parties, which is crucial to achieving the real-world course correction that the agency seeks to accomplish.

As an alternative basis, EPA should eliminate all prior GHG standards because they rely upon an ABT program that is inconsistent with the best reading of the Clean Air Act. The Clean Air Act presupposes standards that apply to individual vehicles, not to a manufacturer's entire fleet of a class of motor vehicles. After *Loper Bright*, EPA may no longer rely upon judicial deference to sustain its unlawful ABT program for motor vehicles. EPA should therefore rescind the current GHG standards and replace them with standards that can be achieved by individual vehicles, not manufacturer fleets.

EPA should also eliminate all prior GHG standards because they include EVs that do not emit, and thus do not belong in the class of motor vehicles that contribute to climate change. By including EVs, the EPA pushed an unlawful fuel-switching mandate, justifying a repeal of GHG standards. EPA should therefore rescind the current standards and replace them with standards that can be achieved without EVs.

EPA should also repeal at least the heavy-duty GHG standards for trucks because EPA relied upon a deeply flawed model of technology adoption that EPA admits has no basis in the real world.

EPA should also have a Plan C. As a severable backup alternative that applies only if EPA's reconsideration of the Endangerment Finding and separate repeal of all GHG standards on an alternative basis is vacated by the courts, EPA should freeze the current standards at model year 2026. EPA, as the D.C. Circuit has recognized, has very broad discretion when setting standards under Section 202(a), so EPA could justify a regulatory freeze based on the high cost and dubious commercial feasibility of the Biden EPA standards, particularly in light of the repeal of IRA tax credits and state-level EV mandates. A regulatory freeze, as a backup to EPA's reconsideration of the Endangerment Finding, would also substantially reduce the risk of a judicial reinstatement of the Biden EPA standards, and thus promote needed certainty for motor vehicle manufacturers planning production years in advance—and for the rest of us whose choices are determined by what those manufacturers decided to make and cell. Without the certainty of alternative standards, manufacturers may continue attempting to comply with the Biden EPA standards.

Last, EPA's final rule must clearly preserve preemption of state law. For motor vehicles, preemption is express: if a class new motor vehicle is regulated at all under Title II, states may not regulate emissions from new motor vehicles. For other sources, the background legal rule is

that states lack power to regulate out-of-state air pollutant emissions resulting from out-of-state-conduct. To depart from the background legal rule, the Clean Air Act must affirmatively and clearly vest such extraordinary authority in the states. Because the Clean Air Act does no such thing, state efforts to regulate GHG emissions extraterritorially are preempted.

ARGUMENT

1. SECTION 202(A) PRECLUDES REGULATING GREENHOUSE GASES BASED UPON GLOBAL EFFECTS (C-11, C-24, C-25)

EPA's primary legal rationale is correct: Section 202(a) does not authorize the regulation of tailpipe GHG emissions, at least not to regulate their global effects on the climate.[40] The Supreme Court's 2007 decision in *Massachusetts v. EPA* was egregiously wrong to suggest otherwise. Although GHGs may be "air pollutants" under the Act's general definition, the Court erred in concluding they cause the type of "air pollution" Congress authorized EPA to regulate under Section 202(a). Even setting aside the Supreme Court's legal errors, *Massachusetts* rested upon the assumption that EPA's authority to regulate GHGs such as carbon dioxide could be harmonized with DOT's specific mandate to set fuel-efficiency standards.[41] Experience has shown this assumption false. The EPA's 2024 GHG regulations directly conflict with the Nation's fuel economy laws, demonstrating that the two statutory schemes cannot coexist as the Court envisioned.

1.1. The Statutory Text and Context Limit "Air Pollution" to Ambient Air Pollution (C-11, C-24)

What constitutes "air pollution" under a particular provision of the Clean Air Act depends on the specific statutory context of the regulation at issue. For the purposes of Section 202(a), the global climatic effects of GHGs do not fit within the meaning of that term.

Although the Supreme Court in *Massachusetts* determined that GHGs fit within the Act's broad, definitional term "air pollutant," that is not the end of the inquiry. The operative question is what constitutes "air pollution" for the purposes of Section 202(a). In *Utility Air Regulatory Group v. EPA* (*UARG*), the Court acknowledged applying this boundless definition throughout all of the Act's operative provisions would be "obviously untenable."[42] Instead, the Court explained, the meaning of "air pollutant" must be read in its specific context, because a statutory

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[40] *See* 90 Fed. Reg. at 36,299.

[41] *See Massachusetts*, 549 U.S. at 532.

[42] 573 U.S. 302, 316 (2014).

term "may take on distinct characters from association with distinct statutory objects calling for different implementation strategies."[43] The context of Section 202(a)—a provision designed to address regional ambient air pollution such as ground-level ozone (i.e., smog)—makes clear that globally mixed gases like carbon dioxide are not the kind of "air pollution" Congress authorized the EPA to target in that section.

The analysis begins with the statutory text. The Act generally defines an "air pollutant" as "any air pollution agent or combination of such agents, including any physical, chemical, … substance or matter which is emitted into … the ambient air."[44] The majority in *Massachusetts* focused on the capacious phrase "any physical, chemical, … substance," concluding it "embraces all airborne compounds of whatever stripe."[45] But as Justice Scalia explained in his dissent, this "pretends half of the definition does not exist" by ignoring the crucial qualifier: "air pollution agent."[46] That qualifier—"air pollution agent"—is critical. A substance is only an "agent" of air pollution if it causes "air pollution." The nature of that pollution, therefore, defines the scope of the agent. This invites a contextual reading not of the word "pollutant," but of the harm (the "pollution") that Congress intended to address in a specific provision.[47]

Here, the immediate statutory context of Section 202 is replete with references to ambient air pollutants—such as hydrocarbons, carbon monoxide, and oxides of nitrogen—that cause regional air quality harms.[48] This strongly suggests the "air pollution" subject to regulation under Section 202(a) is the kind that causes local harm when it contaminates the ambient air near the earth's surface, not globally well-mixed gases that are harmless to breathe.

The history and purpose of the provision confirm this reading. Section 202(a) was enacted to combat a specific, well-understood problem: the urban smog on similar air pollution that plagued American cities. The provision's history is tied to controlling the direct, localized harms from the criteria pollutants that cause smog and other ambient air hazards. This historical context defines what Congress understood to mean in this section. It would be "peculiar" to conclude that in

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[43] *Id.* at 320 (quoting *Env't Def. v. Duke Energy Corp.*, 549 U.S. 561, 574 (2007)).

[44] 42 U.S.C. § 7602(g).

[45] 549 U.S. at 528–29.

[46] *Id.* at 556 (Scalia, J., dissenting).

[47] *See Fischer v. United States*, 144 S. Ct. 2176, 2184 (2024) (explaining a word is "given more precise content by the neighboring words with which it is associated") (quoting *United States v. Williams*, 553 U.S. 285, 294 (2008)).

[48] *See* 42 U.S.C. § 7521(a)(3)(A)(i), (g), (h), (j), (k).

creating a targeted tool to clean the air in American cities, Congress also silently hid a sweeping mandate to regulate global climate.[49] "At bottom," as Judge Brown has explained in a persuasive dissent from denial of rehearing en banc, "Congress understood the dangers of 'any air pollutant' in [Section 202](a)(1) in terms of the ill-effects caused those who inhale the pollutants, not the broad, attenuated consequences of climate change."[50] Indeed, "[i]n drafting the 1990 Amendments, Congress considered—and expressly rejected—proposals authorizing EPA to regulate GHGs under the CAA."[51]

The Supreme Court's decisions in *UARG* and *West Virginia v. EPA* support this contextual approach. As the Court explained in *UARG*, forcing GHGs into regulatory programs not designed for them would lead to "calamitous consequences" and produce a result "contrary to congressional intent."[52] This concern is at the foundation of the major-questions doctrine as articulated in *West Virginia*. When an agency claims to "discover in a long-extant statute an unheralded power" to decide issues of "vast economic and political significance" it must point to "clear congressional authorization."[53]

Reading Section 202(a) to include GHGs presents such an "extraordinary case."[54] It transforms a tool for combating ambient air pollution into a sweeping mandate to restructure the Nation's transportation sector—a policy Congress has "conspicuously and repeatedly declined to enact itself."[55] This is the kind of dramatic assertion of power that triggers judicial skepticism. The Court's "usual approach" is "to 'resist reading' particular sub-provisions 'to create a coverall' statute."[56] That resistance is heightened when an agency uses a provisions vague text to claim the authority to decide a major national question. The statutory context, informed by the provision's text, history, and purpose, makes clear that Congress did not provide the explicit authorization

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[49] *See Fischer*, 144 S. Ct. at 2186.

[50] *Coal. for Responsible Regul., Inc. v. EPA*, No. 09-1322, 2012 WL 6621785, at *6 (D.C. Cir. Dec. 20, 2012) (Brown, J, dissenting from the denial of rehearing en banc).

[51] *Id.* at *5.

[52] 573 U.S. at 322.

[53] *West Virginia v. EPA*, 597 U.S. 697, 724, 716, 723 (2022) (cleaned up).

[54] *Id.* at 721.

[55] *Id.* at 724.

[56] *Fischer*, 144 S. Ct. at 2189 (quoting *Yates v. United States*, 574 U.S. 528, 549 (2015)).

required to regulate globally mixed, non-toxic gases to be regulated as "air pollution" under this particular provision.

1.2. An Expansive Reading of Section 202(a) Directly Conflicts With the Nation's Fuel-Economy Law (C-25)

Even if well-mixed GHGs could be considered "air pollution," their inclusion in Section 202(a) must be rejected because it cannot coexist with Congress's other statutory commands. The most important of these—fuel-efficiency rules under Energy Policy and Conservation Act of 1975 (EPCA)—are a critical element the *Massachusetts* Court failed to properly weigh. The Court summarily dismissed the argument that EPA tailpipe GHG standards would conflict with DOT's fuel-efficiency program by empowering EPA to became a *de facto* fuel-efficiency regulator.[57] With little analysis, the Court merely assumed the two statutory schemes could be harmonized, stating "there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency."[58]

Practical experience has shown that the Supreme Court's assumption was egregiously wrong. Although DOT and EPA at least attempted to harmonize their regulations, any pretense of harmony came to an abrupt end when the Biden EPA set tailpipe GHG standards so stringent that they effectively mandated a nationwide transition to EVs. This EV-forcing regime creates a direct statutory conflict because it fundamentally undermines the specific and detailed framework Congress established in the EPCA, a point that even the Biden DOT "acknowledge[d]" as creating "statutory-driven cognitive dissonance."[59]

Under EPCA, Congress directs DOT to prescribe the "maximum feasible" average fuel economy standards for automobiles.[60] Congress carefully circumscribed this authority, however, with an explicit set of prohibitions to ensure the standards were based on improving the efficiency of internal-combustion automobiles, not on forcing a transition away from them. When setting these standards, DOT "may not consider the fuel economy of dedicated automobiles," that is, vehicles that run only on alternative fuels like electricity.[61] Likewise, the statute forbids the

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[57] *Massachusetts*, 549 U.S. at 532.

[58] *Id.*

[59] 88 Fed. Reg. 56,128, 56,349 (Aug. 17, 2023).

[60] 49 U.S.C. § 32902(a), (b).

[61] *Id.* §§ 32902(h)(1), 32901(a)(1)(J), (a)(8).

agency from considering the fuel economy of plug-in hybrid vehicles when they are operating on electricity from the grid.[62]

Congress thus wanted to encourage the voluntary production of EVs as an additional flexibility by allowing manufacturers to count their higher equivalent fuel economy for compliance purposes after the standards were set. But Congress explicitly forbade the setting of standards high enough that it would mandate the production of those vehicles in the first place. This creates a statutory ceiling on how stringent fuel economy standards can be, tethering those standards to what is technologically feasible and economically practicable for automobiles powered by gasoline and diesel.[63]

Authorizing EPA to set carbon-dioxide emission standards for motor vehicles destroys that regulatory ceiling and makes DOT's prohibition on ordering a switch to alternative fuel nugatory. As EPA and DOT previously explained, because there is a direct "one-to-one relationship between [carbon-dioxide emissions and fuel consumption]" for gasoline and diesel vehicles, a regulation limiting carbon-dioxide emissions from those motor vehicles is a *de facto* fuel-efficiency standard.[64] They are two sides of the same coin. Unbound by EPCA's specific prohibitions, the Biden EPA used this relationship to engineer a backdoor EV mandate. The Biden EPA treated EVs as "zero-emissions" vehicles for purposes of compliance (even though they run on electricity often generated from carbon-emitting power plants) and then set fleet-average carbon-dioxide standards so low that they are technologically unfeasible for a fleet composed solely of gasoline and diesel-fueled motor vehicles (even for strong hybrids).[65] The result is that manufacturers must produce and sell a government-dictated percentage of EVs to offset deficits from even the most efficient internal-combustion cars and trucks.

This renders EPCA a dead letter. If DOT were to submit a truly "maximum feasible" standard without considering EVs, as EPCA explicitly requires, then that DOT standard would necessarily be less stringent than EPA's tailpipe standards for carbon-dioxide including EVs. Manufacturers, however, would still be bound by EPA's more demanding *de facto* standard. This makes NHTSA's standard-setting process, and the entire fuel economy scheme established by EPCA, a useless exercise. As the Supreme Court has recently reiterated, "the canon of surplusage"

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[62] *Id.* § 32902(h)(2).

[63] *Id.* § 32902(f).

[64] 76 Fed. Reg. at 57,124–25.

[65] *See* Attached Ex. A & Ex. B.

strongly disfavors a "statutory construction" that would "render[] an entire subparagraph meaningless."[66] How much more so for a construction that would render an entire statutory scheme meaningless? As the "Court has noted time and time again," statutory interpretations are "obliged to give effect, if possible, to every word Congress used."[67]

This outcome is precisely the kind of interpretive problem the Supreme Court warned against in *FDA v. Brown & Williamson Tobacco Corp.*[68] There, the Court held that an agency cannot use a general statutory provision to regulate in a manner that fundamentally undermines a more specific and comprehensive congressional scheme.[69] The *Massachusetts* Court believed that *Brown & Williamson* was distinguishable, but experience under the Biden Administration has proven otherwise.[70] Here, EPA has used the general language of Section 202(a) to override the specific framework Congress created for regulating automotive fuel efficiency. Just as in *Brown & Williamson*, interpreting Section 202(a) as EPA did in the Endangerment Finding and the 2024 Rule would give the agency "the authority to ban [internal-combustion motor vehicles] entirely."[71] "Congress, for better or for worse, has created a distinct regulatory scheme for [those vehicles]."[72]

The real-world conflict between these two regulatory programs demonstrates that the premise of harmony underlying the *Massachusetts* decision was wrong. The only way to give effect to both statutory schemes is to recognize that Congress did not intend for Section 202(a) to authorize GHG regulations that would thoroughly subvert its express commands in EPCA.

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The foundational legal premise of the 2009 Endangerment Finding was that Section 202(a) could be repurposed to stabilize greenhouse gas emissions and regulate global climate change. That was wrong. The decision's legal foundation was a flawed, acontextual reading of the term "air pollutant." As the Supreme Court has since made clear in cases like *UARG*, the relevant "air pollutants" vary depending on the "air pollution" intended to be regulated in each specific

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[66] *Pulsifer v. United States*, 601 U.S. 124, 143 (2024) (cleaned up).

[67] *Nat'l Ass'n of Mfrs. v. Dep't of Def.*, 583 U.S. 109, 128–29 (2018).

[68] 529 U.S. 120.

[69] *Id.* at 159–61.

[70] *See Massachusetts*, 549 U.S. at 531.

[71] *Brown & Williamson*, 529 U.S. at 159.

[72] *Id.*

statutory context. The context of Section 202(a), designed to combat local smog and ambient air quality problems, is a clear mismatch for globally mixed gases. At the same time, the core legal assumption underlying the *Massachusetts* decision has collapsed. The regulatory harmony the Court assumed has been shattered by a direct statutory conflict with the Nation's fuel economy laws. It is now clear that the effort to shoehorn the global issue of climate change into a statute designed for local air quality has failed. To continue to rely on the Endangerment Finding is to ignore the law, the facts, and the lessons of experience. The Proposed Rule is correct to repeal it for those reasons.

2. New U.S. Motor Vehicle Emissions Do Not Meaningfully "Cause, or Contribute to" Endangerment "Which May Reasonably Be Anticipated" (C-2, C-12, C-14, C-15, C-27)

Even if GHGs could be properly classified as "air pollutant[s]" and "air pollution" under Section 202(a), EPA should still rescind the 2009 Endangerment Finding. Section 202(a) authorizes regulation when the Administrator makes a "judgment" that emissions from a "class or classes of new motor vehicles" either "cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare."[73]

The statutory text includes multiple constraints.

First, the phrase "reasonably be anticipated" requires a reasonable degree of foreseeable danger, and prohibits speculation. As explained by Judge Brown in her dissent from denial of rehearing en banc, "[i]n order to reasonably anticipate that a pollutant will contribute to air pollution that endangers public health or welfare, the Agency would have to conclude that pollution created by CO_2 or another GHG is a reasonably direct cause of the damage to public health and welfare."[74] But "any harm to human health and welfare flowing from climate change comes at the end of a long speculative chain."[75]

Second, statutory context suggests a temporal limit to the foreseeability inquiry: EPA sets standards for "new motor vehicles" applicable for their "useful life."[76] That is a period of about 10–15 years for motor vehicles, ending by around 2040, not 2100 or 2200.[77] This temporal

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[73] 42 U.S.C. § 7521(a)(1).

[74] *Coal. for Responsible Regul., Inc.*, No. 09-1322, 2012 WL 6621785, at *7.

[75] *Id.* at *8.

[76] 42 U.S.C. § 7521(a)(1).

[77] *See id.* § 7521(d).

limitation closes "the door to crystal ball inquiry."[78] Thus, EPA must focus on harms that are foreseeable and reasonably likely to emerge over the life of the new motor vehicle. An endangerment that might manifest in "2100" is not one that can be "reasonably anticipated" to result from a model year 2027 motor vehicle. [79]

Third, new motor vehicles must "cause, or contribute" to the "reasonably anticipated" danger. The term "cause" requires but-for causation. The term "contribute" is best read to allow EPA some flexibility to consider the incremental risk of harm of air pollutants in combination with other air pollutants from other sources. But the relevant air pollutant emissions from the class of new motor vehicles must still foreseeably exacerbate the danger. The term "contribute" has to be interpreted in light of "the venerable maxim *de minimis non curat lex* ('the law cares not for trifles')" as that maxim "is part of the established background of legal principles against which all enactments are adopted, and which all enactments (absent contrary indication) are deemed to accept."[80] Further, "agencies possess discretion and must have broad latitude to draw a manageable line."[81]

Fourth, the geographic scope of the inquiry is limited. As even EPA conceded in 2009, EPA must focus on harms to "the United States," not foreign nations.[82] (Strangely, however, EPA under the Biden administration counterbalanced the harms against supposed global climate benefits from regulation.)

Putting all together, emissions from the class or classes of new motor vehicles EPA regulates must meaningfully exacerbate a foreseeable harm within the United States over their useful life.

EPA, to be sure, enjoys considerable discretion within these limits. The statute calls on EPA to make a "judgment," implying discretion. As the D.C. Circuit has confirmed, "EPA's scientific judgment about the causal relationship between greenhouse gases and climate change is a

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[78] *Int'l Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 629 (D.C. Cir. 1973) (cleaned up).

[79] *But see* Endangerment Finding, 74 Fed. Reg. at 66,514 ("The Administrator is basing her findings generally considers the next several decades—the time period out to around 2100, and for certain impacts, the time period beyond 2100.").

[80] *See Wis. Dep't of Revenue v. William Wrigley, Jr., Co.*, 505 U.S. 214, 231 (1992); *see also De Minimis*, Black's Law Dictionary (11th ed. 2019).

[81] *Seven Cnty. Infrastructure Coal. v. Eagle County*, 145 S. Ct. 1497, 1513 (2025)

[82] *Id.* at 66,514.

scientific determination entitled to 'an extreme degree of deference.'"[83] EPA's determinations relating to the foreseeability of the risk and whether a contribution is meaningful should also receive the same deference. "Black-letter administrative law instructs that when an agency makes those kinds of speculative assessments or predictive or scientific judgments, and decides what qualifies as significant or feasible or the like, a reviewing court must be at its most deferential."[84]

Applying these principles, EPA should find there is no endangerment. As we explain next, the scientific case for the Endangerment Finding has collapsed since 2009, as the dire projections that underpinned the finding have not materialized and the original analysis was flawed. Also, the speculative nature and temporal distance of the alleged harms means that any danger cannot "reasonably be anticipated" to be exacerbated by air pollution emissions from new motor vehicles as the statute demands. The contribution from U.S. new motor vehicles to global climate change is scientifically undetectable and thus insufficient to satisfy the statutory "cause, or contribute to" requirement. As the Proposed Rule correctly concludes, even eliminating all GHG emissions from all U.S. motor vehicles—much less marginally reducing GHG emissions from *new* vehicles—"would not have a scientifically measurable impact on GHG emission concentrations."[85] EPA may reach a judgment that a statistically insignificant contribution from new motor vehicles that produces no measurable real-world effect and relies on distant and speculative harms doesn't suffice under Section 202(a).

2.1. The Scientific Basis for the 2009 Endangerment Finding (C-2)

Any regulation under Section 202(a) must rest on a sound factual predicate that emissions "may reasonably be anticipated to endanger public health or welfare."[86] The 2009 Endangerment Finding defined the relevant "air pollution" as the aggregate atmospheric concentration of "six well-mixed [GHGs] … which together, constitute the root cause of human-induced climate change and the resulting impacts on public health and welfare."[87] The finding's technical basis rested almost entirely on synthesizing major scientific assessments, primarily the 2007 reports

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[83] *Coal. for Responsible Regul.*, 684 F.3d at 120 (quoting *Am. Farm Bureau Fed'n v. EPA*, 559 F.3d 512, 519 (D.C.Cir.2009)).

[84] *Seven Cnty. Infrastructure Coal.*, 145 S. Ct. at 1512.

[85] 90 Fed. Reg. at 36,310.

[86] 42 U.S.C. § 7521(a)(1).

[87] Endangerment Finding, 74 Fed. Reg. at 66,516.

from the Intergovernmental Panel on Climate Change Fourth Assessment Report (IPCC AR4) and the U.S. Global Change Research Program (USGCRP).[88] Instead of conducting an independent evaluation of the underlying science, the agency asserted that these reports represented a consensus view sufficient to justify its conclusion that the accumulation of these six gases in the upper atmosphere was the "unambiguous result of human activities" and the "root cause of recently observed climate change."[89]

To connect this global "air pollution" to domestic regulation, EPA determined that GHG emissions from motor vehicles covered by Section 202(a)—all motor vehicles, not just the new motor vehicles that would be regulated—"contribute to this danger."[90] The agency quantified this contribution as approximately 23% of total U.S. GHG emissions and 4% of total global emissions.[91] Citing the Supreme Court's observation that U.S. motor-vehicle emissions make a "meaningful contribution" for purposes of assessing the State of Massachusetts' Article III standing to sue in court, EPA concluded this share was sufficient to trigger regulation.[92] This approach justified regulating a domestic source category based on its fractional contribution to a global atmospheric stock.

The finding's predictions of future harm were based on long-range, high emissions scenarios. By the end of the 21st century, EPA projected an average global warming of 3.2°F (1.8°C) to 7.2°F(4°C) over average temperatures in 1990, with an outer uncertainty range reaching as high as 11.5°F (6.4°C).[93] As a consequence of this warming, EPA projected acute harms. The agency projected that "severe heat waves," and thus heat-related mortality, would "intensify in magnitude and duration over the portions of the United States where these events already occur."[94] For instance, by the 2080s the number of heat wave days in Los Angeles could increase "six-to eight-fold" causing heat-related deaths to increase from about 165 in the 1990s to 1,182 ninety years later.[95] EPA projected a sea-level rise of 7 to 23 inches by 2100, which the agency

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[88] *Id.* at 66,511.

[89] *Id.* at 66,517–18.

[90] *Id.* at 66,537.

[91] *Id.* at 66,539.

[92] *Id.* at 66,538 (quoting *Massachusetts*, 549 U.S. at 525).

[93] *Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act* 64 (Dec. 7, 2009) (TSD).

[94] *Id.* at 83–84.

[95] *Id.* at 84.

noted could be "substantially exceed[ed]."[96] It further projected that hurricanes would become more intense, and "that for each 1.8ºF (1ºC) increase in tropical sea surface temperatures, core rainfall rates will increase by 6 to 18%, and the surface wind speeds of the strongest hurricanes will increase by about 1 to 8%."[97] The agency also anticipated that droughts would become more severe by the end of the century, potentially covering 30% of global land area, and that heavy downpours that currently occur once every 20 years would happen every 4 to 15 years.[98] The agency did concede that there was insufficient evidence to determine whether trends exist in small-scale weather phenomena such as tornadoes.[99]

In assessing these future risks, the agency deliberately excluded any analysis of societal adaptation or GHG mitigation. The finding explicitly stated that "projections of adaptation and mitigation in response to risks and impacts associated with climate change are not appropriate for EPA to consider in making a decision on whether the air pollution endangers."[100] The agency reasoned that adaptation is a "response to endangerment" rather than a factor in determining its existence, even while acknowledging that adaptation would happen and could affect the severity of the risk of harm.[101] The finding was thus based on an assessment of projected risks and impacts without accounting for the potential effects of future adaptation or any projected mitigation efforts.

2.2. The Scientific Basis for EPA's Finding Has Collapsed (C-2, C-14, C-15, C-27)

EPA's scientific case has now collapsed. The scientific and empirical evidence since the Endangerment Finding was issued has invalidated its alarmist conclusions. EPA's dire predictions of accelerating temperature rise, worsening extreme weather, and rapidly rising seas have not materialized. Moreover, the original evidence was based on a flawed and incomplete assessment of the evidence that systematically overstated risks while ignoring countervailing factors and human adaptation. As this section details, the scientific predicate for endangerment is no longer sound. At a minimum, EPA could, based on the current record, reach a scientific

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[96] *Id.* at 67–68.

[97] *Id.* at 74–75.

[98] *Id.* at 74.

[99] *Id.* at 44.

[100] Endangerment Finding, 74 Fed. Reg. at 66,512.

[101] *Id.*; *see* TSD at 3.

judgment that there is no reasonably anticipated endangerment justifying regulation of new motor vehicles under Section 202(a).

2.2.1 The climate models relied upon by EPA systematically overpredict warming

As the Proposed Rule correctly notes, EPA's projections for temperature increases, extreme weather events, and sea-level rise relied upon in 2009 were unduly pessimistic and have not been borne out by subsequent empirical data.[102] A comprehensive 2025 review by a Department of Energy working group cited by EPA highlights numerous discrepancies between the alarming projections that underpinned the Endangerment Finding and the observational record of the past 16 years.[103]

EPA's most extreme predictions of global temperature rises by the end of the century of between 7.2°F(4°C) to 11.5°F(6.4°C) over temperatures in 1990 were wrong.[104] The most likely emissions scenarios now projected warming of approximately 3.4°F (1.9°C) by 2100, well below EPA's expected range.[105] Indeed, while specific year-by-year estimates are not given, the Endangerment Finding's projections suggested a warming of approximately 1.5 °F (0.8°C) over 1990 averages by 2022.[106] Only about half of that warming—about 0.7 °F (0.4°C)—was actually observed.

This discrepancy is in significant part because climate models have almost universally run "hot," predicting more warming than has been observed at the surface and, most notably, in the bulk troposphere. One recent analysis found that medium- and high-sensitivity models from the latest generation (CMIP6) "conspicuously over-predict the warming" since 1980 when compared to multiple observational datasets.[107] This discrepancy is even more pronounced in the tropical troposphere, a region considered critical for detecting the impacts of greenhouse effect warming. There, every climate model in the CMIP6 ensemble of models overpredicted the average

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[102] 90 Fed. Reg. at 36,308.

[103] Climate Working Grp., U.S. Dep't of Energy, *A Critical Review of Impacts of Greenhouse Gas Emissions on the U.S. Climate* (2025) (*DOE Critical Review*).

[104] *See* TSD at 64.

[105] *See* Int'l Energy Agency, *World Energy Outlook 2023*, at 22, 158–59 (2023), https://perma.cc/8S7J-8R88. The IEA STEP model predicts a warming of 2.4°C over preindustrial levels. The baseline for the 2009 Endangerment Finding was 1990 average temperatures, at which point temperatures had already risen 0.5°C over the pre-industrial baseline. *See Global Temperatures*, NASA Earth Observatory (last accessed Sep. 17, 2025), https://earthobservatory.nasa.gov/world-of-change/global-temperatures.

[106] TSD at 65.

[107] *See DOE Critical Review* at 33; *see also* N. Scafetta, *CMIP6 GCM ensemble members versus global surface temperatures*, 60 Climate Dynamics 3091 (2023).

warming trend between 1979 and 2014 in both the Lower- and Mid-Troposphere levels both globally and in the tropics.[108] This mismatch was presented to EPA before the Endangerment Finding was issued, but EPA ignored it.[109]

This flawed modeling matters because the entire finding of endangerment rests on projections of future harm derived from these models. If the models' temperature projections are fundamentally unreliable, then the downstream predictions of dire health and welfare impacts are likewise unsupported, undermining the core scientific predicate for the finding. Exacerbating this problem, the damages from climate change are only significant in worst-case scenarios with extreme temperature rises. When the rate of warming is reduced, the shock of speedy warming is mitigated and the likelihood of adaptation increases significantly.

2.2.2 The observational record contradicts EPA's projections of worsening climate extremes

As noted above, the public health and welfare harms predicted in 2009 turned primarily on increased extreme weather because of increasing global temperatures: heat waves, sea level rise, tropical cyclones and hurricanes, droughts and flooding, etc. But the observational record provides little support for extreme negative outcomes from any of these findings. For most categories of extreme weather, the data show no statistically significant long-term trends that can be attributed to climate change.

Heat waves. The Endangerment Finding's dire predictions regarding U.S. heat waves have little support because they failed to account for the full historical context.[110] Long-term data show that U.S. heat wave activity peaked during the dust bowl in the 1930s, when agricultural practices such as overplowing of greatly expanded cropland in the Great Plains enhanced natural variability.[111] Long-term trends reveal that while the average coldest temperatures of the year have increased since 1900, the average warmest temperatures are roughly the same as they were

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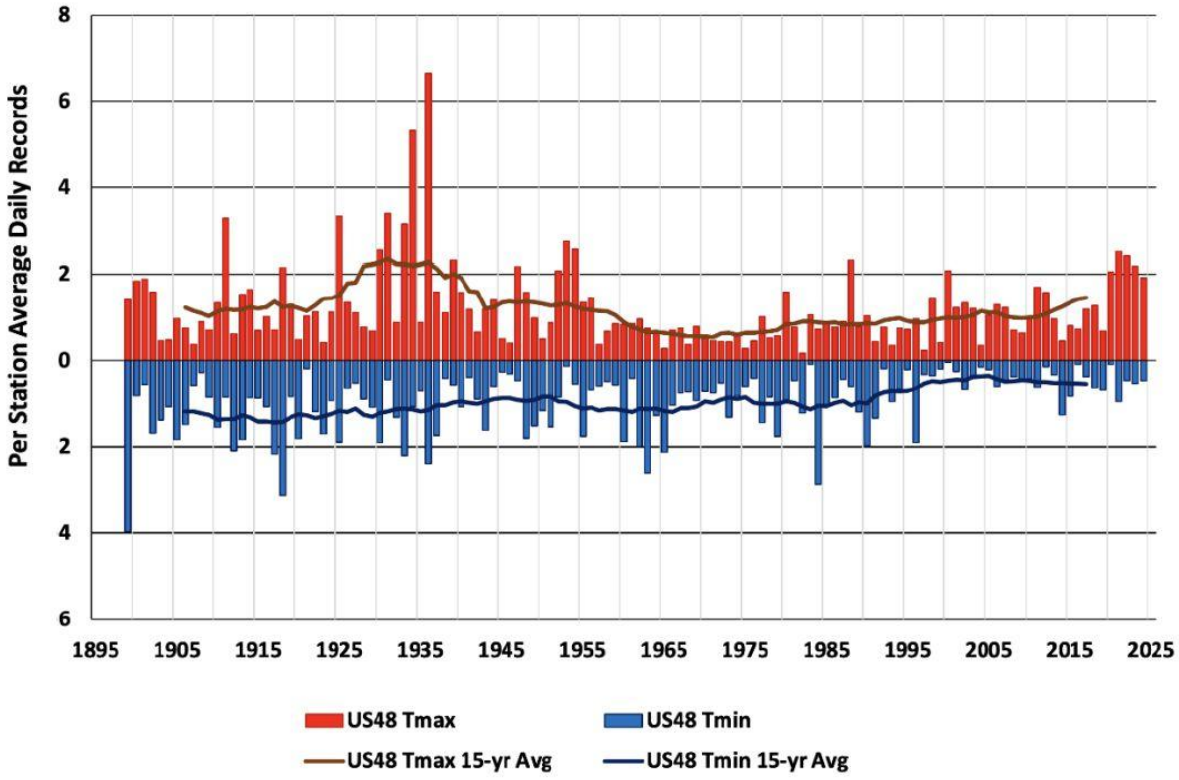
[108] *See DOE Critical Review* at 34; *see also* R. McKitrick & J. R. Christy, *Pervasive Warming Bias in CMIP6 Tropospheric Layers*, 7 Earth & Space Sci. (2020).

[109] *See* Endangerment Finding, 74 Fed. Reg. at 66,522 ("While there have not been strong trends over the last seven to ten years in global surface temperature or lower troposphere temperatures measured by satellites, this pause in warming should not be interpreted as a sign that the Earth is cooling or that the science supporting continued warming is in error. Year-to-year variability in natural weather and climate patterns make it impossible to draw any conclusions about whether the climate system is warming or cooling from such a limited analysis.").

[110] *See* Endangerment Finding, 74 Fed. Reg. at 66,524–25.

[111] Steven E. Koonin, *Unsettled* 102 (2021).

more than 100 years ago.[112] As a result, the U.S. climate has become *less* extreme over the past century as the gap between summer highs and winter lows has narrowed.[113] As a result, there have been fewer extreme temperature related deaths over the last two decades.[114]



Number of daily record High (red) and Low (blue) temperatures for warm and cold seasons in the continental U.S. The lines represent the 15-year running, centered average.[115]

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[112] *Id.*

[113] *See DOE Critical Review* at 53, 55; *see also Climate Science Special Report: Fourth National Climate Assessment, Volume I*, at 190–91 (D. J. Wuebbles et al. eds., 2017).

[114] *See*. Qi Zhao et al., *Global, Regional, and National Burden of Mortality Associated with Non-optimal Ambient Temperatures from 2000 to 2019: A Three-stage Modelling Study*, 5 Lancet Planetary Health E415 (2021) (finding "global excess death ratio changed by −0.51 percentage points for cold temperatures and increased by 0.21 percentage points for hot temperatures, resulting in a net decline of −0.30 percentage points" with global excess deaths of approximately 5.5 million).

[115] *DOE Critical Review* at 55.

Sea-level rise. Global sea levels are rising, but the rate of rise along U.S. costs has been highly variable, and is often dominated by local factors like land subsidence, rather than climate-driven acceleration. Some high risk areas, such as Galveston, Texas, and Grand Isle, Louisiana have experienced significant sea-level rise rates. But more than half that effect is due to local land sinking.[116] In other locations like New York City, the opposite story can be told. Although relative sea level in Manhattan has risen over 11 inches over the past century, vertical land motion in the area has changed roughly 5 inches during the same period, so that the absolute rate of sea-level rise at the southern tip of the island is 0.06 inches/year, or about 55 percent of the measured relative sea-level rise.[117] Crucially, an analysis of the full U.S. tide gauge network shows that the global mean sea-level began rising during the period 1820–1860, just following the end of the Little Ice Age and well before most anthropogenic greenhouse gas emissions.[118] Accounting for that trend, recent "U.S. tide gauge measurements reveal no obvious acceleration beyond the historical average rate of sea level rise."[119]

Hurricanes and tropical cyclones. The IPCC's Sixth Assessment Report (IPCC AR6) expressed "*low confidence* in most reported long-term … trends in [tropical cyclone] frequency or intensity" and notes that the reliable record of U.S. landfalling hurricanes since 1900 "shows no trend."[120] Although Atlantic hurricane activity has shown a significant increase since 1970, that increase is likely in part due to variations associated with the Atlantic Multidecadal Oscillation—sea surface temperature and sea level pressure fluctuations connected to large scale ocean circulation patterns.[121] "While the largest numbers of landfalling hurricanes are from 2004, 2005 and 2020, there is no statistically significant trend since 1920."[122]

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[116] *DOE Critical Review* at 76–78; *see, e.g.*, M. A. Karegar et al., *Subsidence along the Atlantic Coast of North America: Insights from GPS and late Holocene relative sea level data*, 43 Geo. Rsch. Ltrs. 3126 (2016).

[117] *DOE Critical Review* at 79.

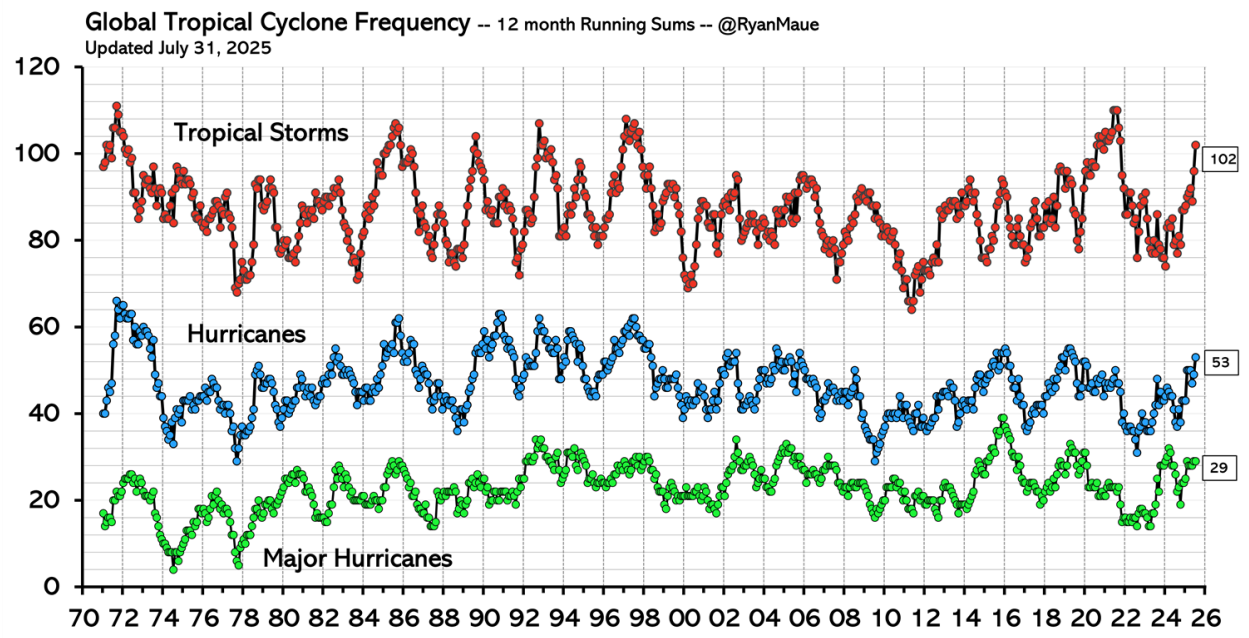
[118] *Id.* at 75.

[119] *Id.*

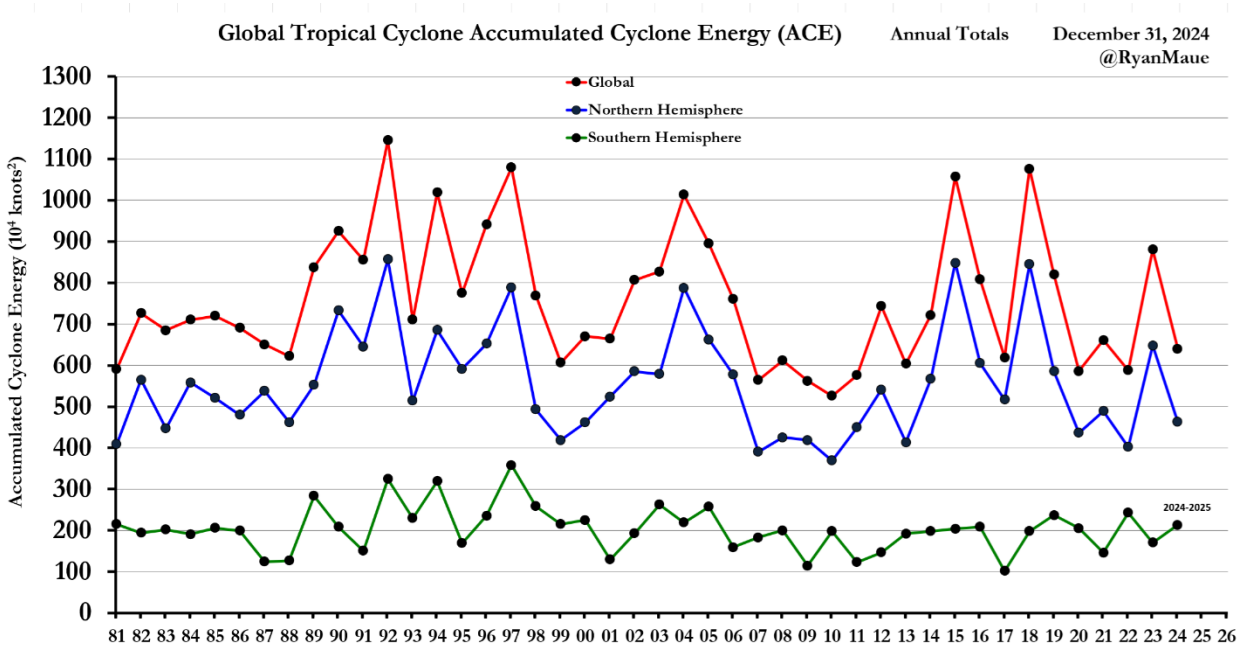
[120] *Id.* at 48 (quoting IPCC AR6).

[121] *Id.* at 49–50.

[122] *Id.* at 50; *see also* P. Klotzbach, et al., *Continental U.S. Hurricane Landfall Frequency and Associated Damage: Observations and Future Risks*, 99 Bulletin of the American Meteorological Society 1359 (2018).



Last 50-years+ of Global Tropical Storm and Hurricane frequency in 12-month running sums.[123]



Last 40 years of Global Tropical Storm and Hurricane Accumulated Cyclone Energy, Annual Totals.[124]

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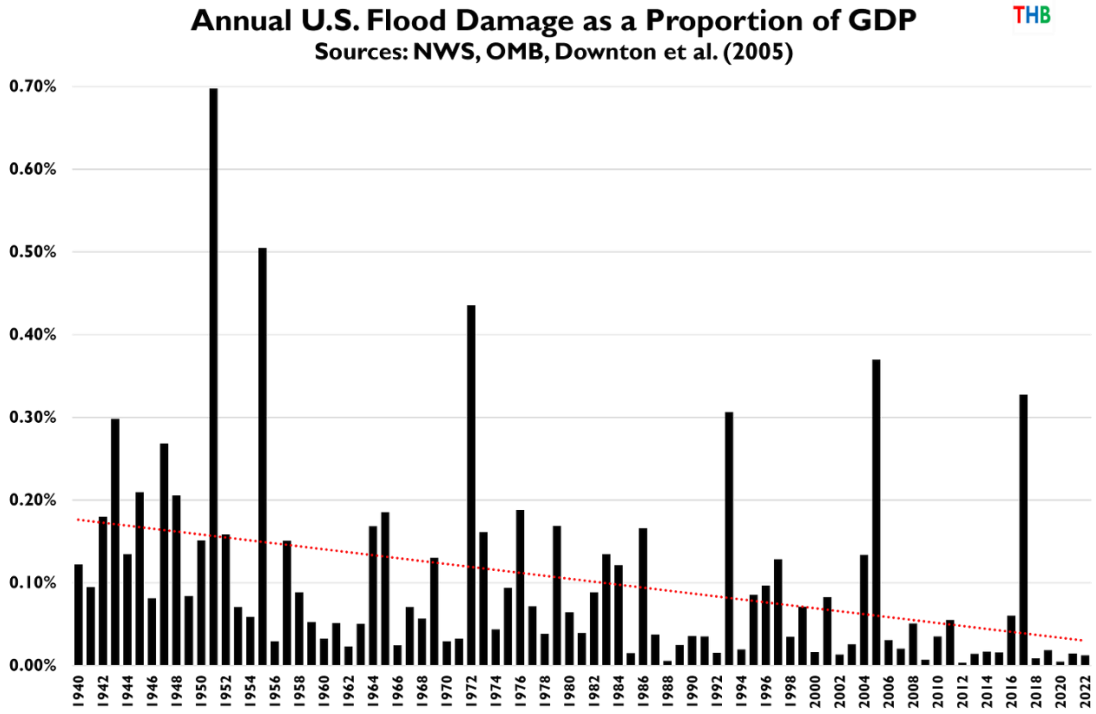
[123] Ryan Maue, *Global Tropical Cyclone Activity* (2025), https://climatlas.com/tropical/.

[124] *Id.*

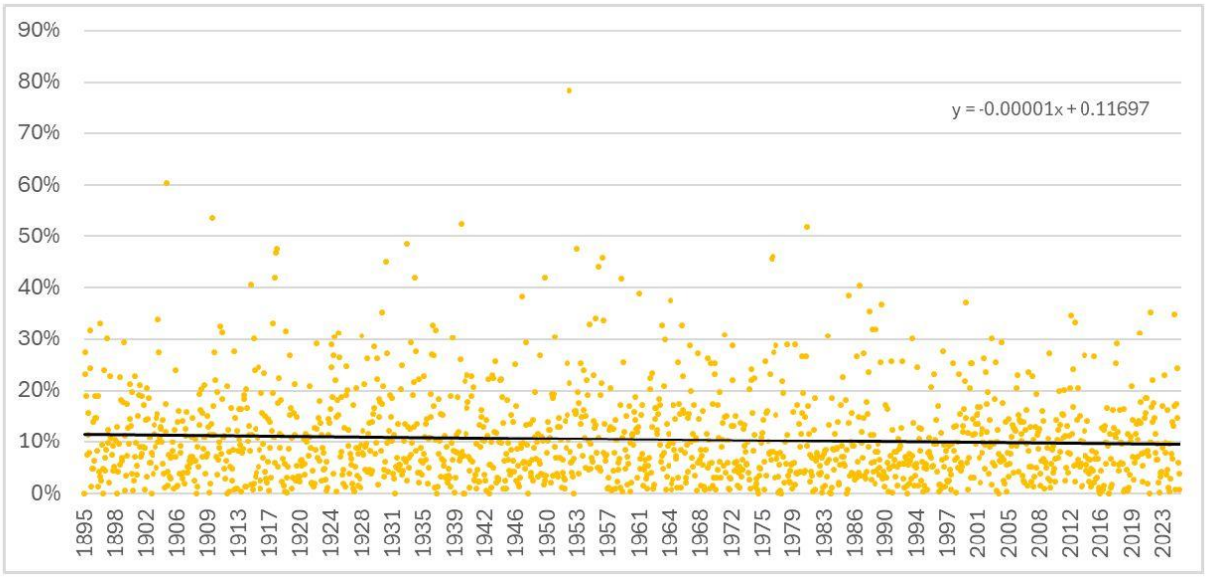
Floods and Droughts. U.S. data similarly provide no robust evidence of increasing flood magnitudes nationwide, and drought statistics for the continental U.S. have shown a slight decline when adjusted for GDP.[125]



U.S. Flood Damage as a Proportion of GDP.[126]

[125] *DOE Critical Review* at 67–68.

[126] Roger Pielke Jr., *Unbelievable: U.S. Flood Damage*, The Honest Broker (Nov. 7, 2023), https://rogerpielkejr.substack.com/p/unbelievable-us-flood-damage.

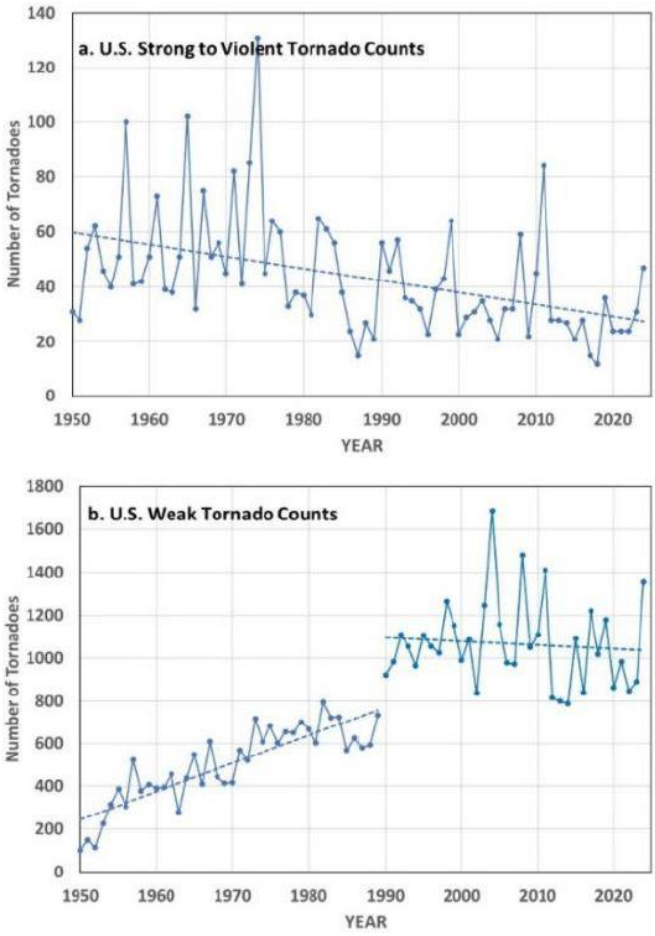


Monthly percent of US classified as "Very Dry," 1895—2025.[127]

Tornadoes. For tornadoes, the IPCC AR6 likewise found that observational trends are "not robustly detected," and data since 1950 show a substantial *decrease* in the frequency of strong to violent tornadoes (EF3–EF5).[128]

[127] *DOE Critical Review* at 68.

[128] *Id.* at 66.



Annual U.S. tornado counts for (a) strong to violent tornadoes (EF3 to EF5), and (b) weak tornadoes (EF0 to EF2).[129]

Thus, although individual extreme weather events have often been framed as evidence of a worsening climate, long-term data developed since the Endangerment Finding does not support any claims of systematic increase in frequency or intensity.

2.2.3 EPA's 2009 Endangerment Finding improperly ignored countervailing benefits and human adaptation

The Endangerment Finding also improperly excluded or downplayed critical countervailing factors, leading to a skewed assessment of the net effect of rising carbon dioxide concentrations on public health and welfare.

[129] *Id.* at 67.

First, the 2009 analysis often failed to adequately consider confounding variables and countervailing health effects. For example, Endangerment Findings gloomy conclusion about the balance of heat and cold related deaths—"increases in heat-related mortality due to global warming in the United States are unlikely to be compensated for by decreases in cold-related mortality"[130]—are incorrect.

Cold kills more than heat, so a warmer climate is a less deadly climate. One comprehensive multi-country study found that cold weather was responsible for more than 18 times as many deaths as hot weather.[131] Similarly, a 2021 study found that, while heat-related deaths have increased somewhat over the last two decades, these were more than offset by reductions in cold-related deaths, with the net effect that climate-related mortality has *decreased* by about 166,000 deaths per year.[132] The CDC's analysis of U.S. death certificates similarly suggests that cold is far more deadly than heat. As they explain:

> During 2006–2010, about 2,000 U.S. residents died each year from weather-related causes of death. About 31% of these deaths were attributed to exposure to excessive natural heat, heat stroke, sun stroke, or all; 63% were attributed to exposure to excessive natural cold, hypothermia, or both; and the remaining 6% were attributed to floods, storms, or lightning.[133]

Evidence suggesting that increased greenhouse gas concentrations will lead to more, rather than less, deaths from extreme temperatures on net is weak, and contradicted by data showing that cold is a more significant cause of mortality.

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[130] Endangerment Finding, 74 Fed. Reg. at 66,525

[131] *See DOE Critical Review* at 112; *see also* A. Gasparini et al., *Mortality risk attributable to high and low ambient temperature: a multicountry observational study*, 386 The Lancet 369 (2015), EPA-HQ-OAR-2025-0194-0067.

[132] Qi Zhao et al., *Global, Regional, and National Burden of Mortality Associated with Non-optimal Ambient Temperatures from 2000 to 2019: A Three-stage Modelling Study*, 5 Lancet Planetary Health E415 (2021), EPA-HQ-OAR-2025-0194-0065 (finding "global excess death ratio changed by 0.51 percentage points for cold temperatures and increased by 0.21 percentage points for hot temperatures, resulting in a net decline of 0.30 percentage points" with global excess deaths of approximately 5.5 million).

[133] See Jeffrey Berko et al., *Deaths Attributed to Heat, Cold, and Other Weather Events in the United States, 2006–2010*, CDC, 76 Nat'l Health Statistics Reports (Jul. 30, 2014), https://www.cdc.gov/nchs/data/nhsr/nhsr076.pdf.

Second, and more significantly still, the Endangerment Finding completely excluded any systematic consideration of human adaptation or mitigation measures. The Endangerment Finding explicitly stated that it did not evaluate potential societal responses, viewing adaptation and mitigation as only "potential responses to endangerment" and thus as "outside the scope of the endangerment analysis."[134]

This omission is a critical error. Human societies are not passive victims of changes in climate, but adapt through technological innovation, behavioral changes, and infrastructure improvements. Indeed, adaptation has been remarkably effective at reducing weather- and climate-related risks. For example, the data show that the widespread adoption of air conditioning has resulted in the risk of mortality from excess heat in the U.S. to decline by over 90% between 1962 and 2006.[135] Overall mortality from extreme weather has plummeted by a factor of fifty over the past century, and economic losses as a percentage of GDP have also declined, thanks to better forecasting, stronger building codes, and improved disaster response.[136]

Considering adaptation is particularly important if EPA may base its judgment on harms occurring 75 years hence. Money spent to avoid climate change could also potentially be used to adapt or advance other sectors. Although precise quantification of future reduced vulnerability is difficult, there is no doubt that at least some adaptation will occur. Even with no technological changes—a highly improbable future—there are already meaningful ways that populations can reduce their exposure to the most damaging aspects of climate change. Consequently, an accurate projection of the future impacts and damages of climate change must include some discounting of damages because of cost-effective adaptation. By ignoring adaption, the Endangerment Finding systematically overstated future risks and painted a picture of vulnerability that is inconsistent with historical experience.

Finally, the Endangerment Finding erred by minimizing the substantial beneficial impacts of increased atmospheric carbon dioxide, particularly on agricultural productivity and general plant growth. Although EPA acknowledged these effects, it did so only to marginalize and minimize

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[134] Endangerment Finding, 74 Fed. Reg. at 66,512.

[135] *See DOE Critical Review* at 113; *see also* F. Nordio et al., *Changing patterns of the temperature–mortality association by time and location in the US, and implications for climate change*, 81 Env't Int'l 80 (2015); A. Barreca et al., *Adapting to climate change: The remarkable decline in the US temperature-mortality relationship over the twentieth century*, 124 J. Pol. Econ. 105 (2016).

[136] *See DOE Critical Review* at 110–11; *see also* I. M. Goklany, *Deaths from extreme weather events, 1900–2010*, Reason Found. (2011); R. Pielke Jr., *Scientific integrity and U.S. 'billion dollar disasters'*, 1 npj Natural Hazards 12 (2024).

them. Recent scientific evidence confirms that minimization to be a mistake. The carbon-dioxide fertilization effect is a significant driver of "global greening," with satellite data showing a significant increase in the Earth's vegetated area over the past few decades.[137] This greening has had a measurable positive impact on agriculture. Although EPA in 2009 fretted about future crop losses,[138] one 2023 study using ground-level carbon dioxide and county-level output data concluded that the increase in atmospheric carbon-dioxide concentrations since 1940 had already boosted U.S. yields by 50 to 80 percent for corn, soybeans, and wheat—a far greater gain than was understood sixteen years ago.[139] By treating carbon dioxide only as a cause of potential harm while ignoring carbon dioxide's demonstrated, substantial benefits, the Endangerment Finding presented a fundamentally incomplete and misleading picture.

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The scientific case for endangerment is no longer sound. The dire predictions have not happened, and the analysis upon which they were based is now understood to be critically flawed. The actual record reveals a far more complex and less alarming picture, in which the dangers of climate change are manageable and offset by significant benefits and human ingenuity. This updated scientific reality removes any justifiable basis for an endangerment finding, even assuming EPA's legal interpretation was correct.

2.3. Greenhouse Gas Emissions from U.S. Motor Vehicles Are *De Minimis* and Do Not "Cause, or Contribute to" a Foreseeable Risk of Harm (C-2, C-12, C-27)

Based upon current evidence, Section 202(a)'s contribution and foreseeability requirements cannot be met.

2.3.1 The contribution of new motor vehicles to greenhouse-gas-induced climate change is statistically meaningless

Section 202(a)'s requirement that emissions from a from a "class or classes of new motor vehicles … cause, or contribute to air pollution" requires that EPA establish a meaningful, discernible link between the regulated sources and a foreseeable risk of harm over the useful life

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[137] *See DOE Critical Review* at 3; *see also* Z. Zhu et al., *Greening of the Earth and its drivers*, 6 Nature Climate Change 791 (2016); *see also* Vanessa Haverd et al., *Higher than expected CO_2 fertilization inferred from leaf to global observations*, 26 Global Change Biology 2390 (2020), EPA-HQ-OAR-2025-0194-0069.

[138] Endangerment Finding, 74 Fed. Reg. at 66,531.

[139] *See DOE Critical Review* at 106; *see also* C. Taylor & W. Schlenker, *Environmental drivers of agricultural productivity growth: CO2 fertilization of US field crops*, NBER Working Paper 29320 (2023).

of the new motor vehicles. Although the term "contribute" suggests a lower threshold than but-for causation, allowing EPA to regulate when a source exacerbates a risk of harm, it cannot be read to encompass a connection that is purely theoretical or statistically indistinguishable from zero.[140] A contribution that is scientifically undetectable or below a certain *de minimis* level is legally insufficient.

The emissions from classes of new U.S. motor vehicles fall squarely into this *de minimis* category. The global climate is a single, massive system, and global climate change is the cumulative result of all GHGs mixing in the upper atmosphere. As a result, unlike the harms from the emissions from criteria pollutants, which operate at a local and regional level, any harms attributable to GHGs can only be attributed to the global aggregate of those emissions.

A scientifically valid metric for assessing a source's annual GHG emissions contribution to any harms is as a share of total global GHG emissions. In 2022, the entire fleet of U.S. on-road vehicles accounted for about 2.8 percent of global energy-related GHG emissions.[141] For the period 1979–2023, which has the most extensive global coverage of a variety of weather data types, warming trends are determined to a precision of approximately 15 percent, so the effect of reducing the rate of global warming by eliminating U.S. vehicle GHG emissions would be far below the limits of measurability.[142] Given that global-average temperature is the most direct climate change metric, the effect of these emissions on secondary climate metrics (e.g. severe weather, floods, drought, etc.) from reducing U.S. vehicle GHG emissions would be even less measurable. As a result, EPA must, or at least may, determine that U.S. motor vehicles do not cause or contribute to dangerous greenhouse gas concentrations.

The statutory inquiry, however, is even narrower—a point EPA should take care to make in the final rule. Section 202(a) authorizes regulation of emissions from "*new* motor vehicles," not from the entire on-road fleet. The annual emissions from these new vehicles are only a small fraction of the total fleet's emissions—about one-tenth of on-road emissions. When further subdivided by the "class or classes" that the statute requires EPA to consider, the contribution of any single

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[140] Endangerment Finding, 74 Fed. Reg. at 66,506 ("To be sure, any finding of a 'contribution' requires some threshold to be met; a truly trivial or *de minimis* 'contribution' might not count as such."); *see also Massachusetts*, 549 U.S. at 525 (explaining it believed at the time that "U.S. motor-vehicle emissions make a *meaningful* contribution to greenhouse gas concentrations") (emphasis added).

[141] *See* 90 Fed. Reg. at 36,311; EPA, *Fast Facts: U.S. Transportation Sector Greenhouse Gas Emissions 1990–2022* (2024), https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P101AKR0.pdf.

[142] *DOE Critical Review* at 130.

regulated class becomes a tiny fraction of the already insignificant 2.8 percent figure, or less than 0.3 percent. The effect of eliminating these emissions entirely—much less the marginal changes achievable through regulation—would be so small that it would be completely swamped by natural climate variability and the large uncertainties inherent in climate projections and measurements, rendering it scientifically undetectable.[143] A contribution that is statistically indistinguishable from zero cannot satisfy the plain meaning of "cause, or contribute to."

EPA's regulations have had no meaningful effect on global carbon-dioxide emissions. Even the Biden's EPA's extraordinarily ambitious EV mandate for light- and medium-duty vehicles was estimated to avoid only about 7.2 billion metric tons of carbon dioxide *through 2055*, a 20% percent reduction over the predicted baseline U.S. light- and medium-duty vehicle emissions during that time period.[144] The agency notably refused to quantify the effect of these emissions on temperature change sea-level rise, or any other extreme weather related to climate change, instead using an opaque and highly manipulable "social cost of carbon."[145] The reason is clear: when placed in the context of projected global emissions, which are expected to exceed 1,000 gigatons over the same period, the rule's effect is trivial. EPA's complete transformation of the U.S. motor vehicle sector would avert less than three-quarters of one percent of global emissions, a figure well within the statistical margin of error and incapable of producing any statistically discernible climate effect.

The negligible effect of the rule is confirmed by well-established climate models used for that purpose. Using the Model for the Assessment of Greenhouse Gas Induced Climate Change (MAGICC)—a simple climate model frequently used by EPA and the IPCC—one can analyze the effect of the multi-pollutant rule's emissions reductions against a likely future emissions

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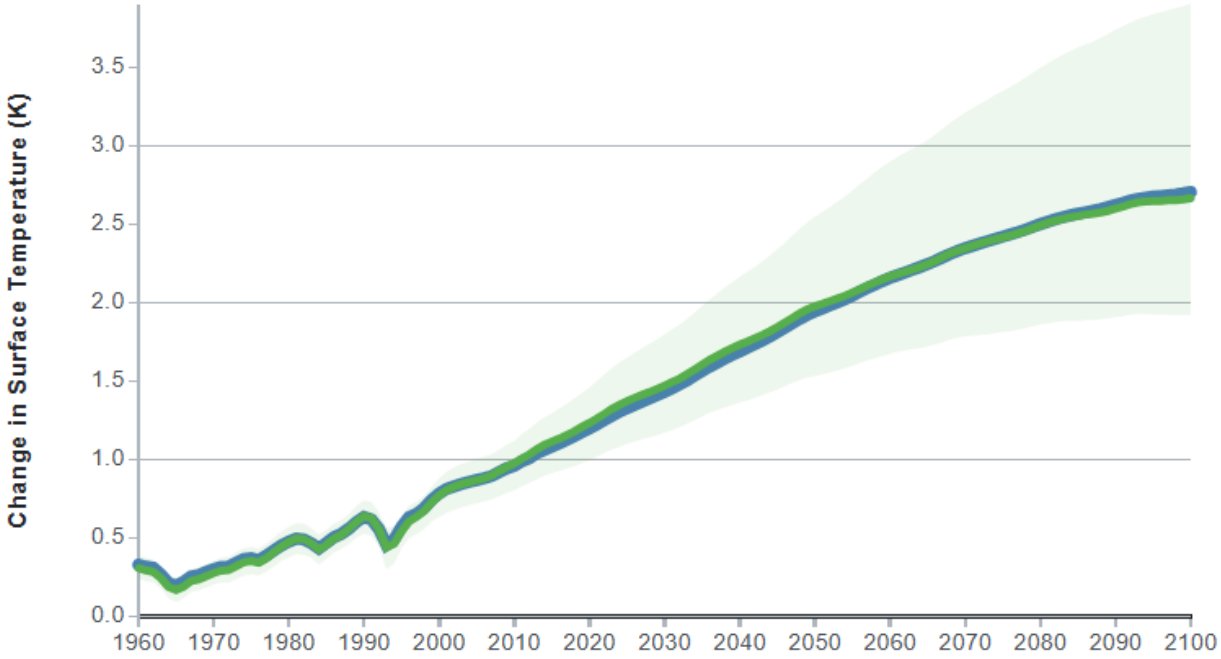
[143] *See DOE Critical Review* at 82 (discussing the challenges of attribution due to high natural variability and model deficiencies).

[144] 89 Fed. Reg. at 28,091 ("The cumulative GHG emissions reductions through 2055 are projected to be 7,200 MMT of CO_2, 0.12 MMT of CH_4 and 0.13 MMT of N_2O, as the fleet turns over year-by-year to new vehicles that meet the light- and medium-duty standards. This represents a 21 percent reduction in CO_2 over that period relative to the No Action case. See section VI of this preamble and Chapter 8 of the RIA. These GHG emission reductions will make an important contribution to efforts to limit climate change and its anticipated impacts."); *see also id.* at 28,097 & tbl. 204.

[145] *Id.* at 28,099 ("While the EPA did not conduct modeling to specifically quantify changes in climate impacts resulting from this rule in terms of avoided temperature change or sea-level rise, the Agency did quantify the climate benefits by monetizing the emission reductions through the application of the social cost of greenhouse gases (SC–GHGs), as described in section VIII.E of this preamble.").

pathway.[146] Under the IPCC's SSP2-4.5 scenario, global temperature rises of 4.5°F (2.5°C) over the pre-industrial baseline are projected to occur by 2100. When the 7.2 billion metric tons of carbon-dioxide-equivalent emission reductions projected from EPA's rule are subtracted from this pathway through 2055, the effect on global temperature is infinitesimal.[147] The model indicates the rule could reduce projected mean global surface temperatures by 0.05°F (0.03°C) by 2100. This temperature change is scientifically and statistically meaningless—it is far too small to be detected and is at least an order of magnitude smaller than the model's own uncertainty and the climate's natural annual variability. The inescapable conclusion is that the rule's effect on the climate is indistinguishable from zero.



Projected mean global surface temperature with (green) and without (blue) emissions reduction from EPA's multipollutant rule.[148]

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[146] *See* M. Meinshausen, et al., *The MAGICC charge model for climate change and air pollution*, 4 Geosci. Model Dev. 1443 (2011).

[147] Calculation made using MAGICC7, with emissions data from the SSP database and subtractions based on 89 Fed. Reg. at 28,097.

[148] Calculation made using MAGICC7, with emissions data from the SSP database and subtractions based on 89 Fed. Reg. at 28,097.

By ignoring this truth, EPA has engaged in a failed regulatory experiment for the last sixteen years. Global GHG emissions have continued to rise, driven primarily by increased emissions from foreign sources. Indeed, as described above, the program has failed to reduce the greenhouse gas emissions from on-road vehicles it directly targeted. The scientific literature confirms this practical reality. Unilateral U.S. policy actions are expected to have "undetectably small direct impacts on the global climate," with any potential effects emerging only with "long delays."[149] Because global emissions are driven by international economic forces, any reduction from the minor U.S. vehicle sector lacks the scale necessary to have a practical effect on the outcome.[150] This compels the conclusion that new motor vehicles don't contribute to the problem: The Clean Air Act was not designed to authorize symbolic regulations that have no measurable effect on the identified risk.

2.3.2 The Increased Risk of Harm from the Statistically Meaningless Contribution of New Motor Vehicles Is Not Reasonably Foreseeable

Regardless, any significant *net* risk of harm to the United States from the statistically meaningless contribution of U.S. new motor vehicles to greenhouse-gas-induced warming and resulting climate change is not reasonably foreseeable by 2050, let alone by 2040, within the relevant timescale for the regulation of the useful life of today's new motor vehicles.[151] So U.S. new motor vehicles are not reasonably anticipated to contribute to endangerment during a reasonable statutory timeframe. The harms contemplated by the Endangerment Finding, if they occur at all, are projected in the far distant future. An endangerment that might manifest in 2100 is not one that can be "reasonably anticipated" and addressed by regulating a statistically meaningless contribution from a model year 2027 vehicle.

Even if the distant future harms in 2100 or 2200 fell within the ambit of the statute, attempting to estimate harm that far in the future is impossible and speculation. As an economist has explained, the statistical analyses underlying such projections necessarily rest "on untestable, far-out-of-

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[149] DOE Critical Review at 129.

[150] *Id.* at 130.

[151] *Cf.* IPCC, *Climate Change 2021: The Physical Science Basis* 1856 (2021) (Table 12.12: Emergence of CIDs in Different Time Periods, As Assessed in This Section), https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_FullReport.pdf (showing no significant harms in the United States are expected high confidence even under highly unrealistic RCP 8.5 warming scenario until 2050); Richard S. J. Tol, *The Economic Effects of Climate Change*, 23 J. Econ. Persp. 29 (2009) (projecting net benefits from global warming below certain temperatures).

sample extrapolation."[152] The task of projecting damage to public welfare from an extra ton of GHGs emitted today "so unfathomable because normal scientific methods … cannot apply."[153] There are "no agreed, quantitatively stable laws underlying damage modeling," and the planet's "slow Earth-system response times greatly limit climate damage learning."[154] Although climate modeling based on past observations is meaningful for understanding physical processes, those historical observations "do not contain data with modes and rates of change equivalent to those predicted," making future projections inherently uncertain.[155] When the scientific community itself acknowledges that long-term damage predictions are based on untestable methodologies and unfathomable complexity, such harms cannot be said to "reasonably be anticipated" under the demanding standard of the Clean Air Act. In these circumstances, courts ought to be extremely deferential.[156]

3. OTHER INDEPENDENT BASES REQUIRE REPEALING THE CARBON-DIOXIDE STANDARDS (C-11, C-12, C-16, C-20, C-21, C-24, C-25)

EPA should also repeal current carbon-dioxide standards on alternative legal and policy grounds.

First, the feasibility of the current carbon-dioxide standards relies upon an ABT program that lacks any authorization in the statute and must be set aside as contrary to the best reading following the Supreme Court's decision in *Loper Bright*.

Second, the feasibility of the current carbon-dioxide standards for model year 2027 and later is premised on including zero-emission vehicles in the regulated class of motor vehicles. This is an attempt to force a nationwide fleet transition constitutes illegal "generation shifting" that the Supreme Court prohibited in *West Virginia v. EPA*.

Third, at a minimum, EPA should repeal the Phase 3 heavy-duty vehicle standards for model year 2027 and later vehicles because EPA relied upon an unreliable and flawed methodology when setting the standards.

Although EPA may (and arguably must) still promulgate carbon-dioxide standards under these alternative bases, EPA may proceed in two steps: (1) repeal the standards on these bases and

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[152] John C. V. Pezzey, *Why the Social Cost of Carbon Will Always Be Disputed*, 10 WIREs Climate Change, art. no. e558 (2019).

[153] *Id.*

[154] *Id.*

[155] *Id.*

[156] *Balt. Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87 (1983).

could defer (2) a replacement rule while courts review EPA's reconsideration of the Endangerment Finding.

3.1. EPA's Averaging, Banking, and Trading Program Is Unlawful (C-11, C-16)

First and most fundamentally, the carbon-dioxide standards are unlawful because the entire architecture of the program rests on an ABT credit program that has no basis in the Clean Air Act. This complex credit scheme allows manufacturers to meet emissions targets on a fleetwide average basis rather than a per-vehicle basis. This is the essential mechanism that allowed the Biden EPA to set standards so stringent that no internal-combustion motor vehicles could meet them and thereby force electrification. Although EPA has used a similar credit scheme for decades, this scheme has no basis in the Act. When it was reviewed, its legality was sustained only by applying *Chevron* deference to the agency's interpretation of statutory silence. Following the Supreme Court's decision in *Loper Bright Enterprises v. Raimondo*, which overruled *Chevron*, that deferential scheme no longer applies. The ABT program thus lacks a valid statutory basis and must be rescinded.

The best reading of the Clean Air Act requires that emission standards under section 202(a) apply to individual vehicles, not to a manufacturer's fleet on average. The text and structure of Title II are fundamentally incompatible with a fleet-wide averaging scheme. As EPA itself once admitted, "the structure of Title II … assume[s] individual vehicle compliance with the applicable standards."[157]

This is evident from the Act's interlocking compliance and enforcement provisions, which are rendered nonsensical by the averaging program. Averaging clashes with "the design and structure of [Title II] as a whole."[158] Title II sets forth a comprehensive, interlocking scheme for enforcing emission standards through testing, certification, warranties, remediation, and penalties. Averaging is incompatible with these provisions, which are "designed to apply to" individual vehicles and "cannot rationally be extended" to fleets.[159]

Testing and certification. Under Title II, EPA must "test, or require to be tested in such manner as [it] deems appropriate, any new motor vehicle or new motor vehicle engine submitted by a manufacturer to determine whether such vehicle or engine conforms with the regulations prescribed under [Section 202]."[160] If the "vehicle or engine conforms to such regulations," EPA

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[157] 45 Fed. Reg. 14,496, 14,502 (Mar. 5, 1980).

[158] *UARG*, 573 U.S. at 321.

[159] *Id.* at 322.

[160] 42 U.S.C. § 7525(a)(1).

must issue a "certificate of conformity." EPA may also later test a vehicle or engine, and if "such vehicle or engine does not conform with such regulations and requirements, [EPA] may suspend or revoke such certificate insofar as it applies to such vehicle or engine."[161] A manufacturer may not sell a vehicle or engine not "covered by a certificate of conformity."[162]

Averaging is incompatible with these requirements in at least two respects. First, by using the singular terms "vehicle" and "engine," along with "any" and "such," the statute contemplates that *individual* vehicles will be tested for conformity. If an individual vehicle does "not conform" with the standards, the certificate of conformity may be suspended or revoked "as it applies to such vehicle."[163] In an averaging regime, testing an individual vehicle or engine cannot show whether it "conforms with the regulations prescribed under" Section 202 because conformity turns on the relevant fleet's (*i.e.*, the averaging set's) average performance overall.

Second, averaging makes it impossible to determine compliance with applicable emission standards *before* a vehicle is sold to obtain the required certificate of conformity.[164] As EPA has previously acknowledged, "[b]efore a manufacturer may introduce a new motor vehicle into commerce, the manufacturer must obtain an EPA certificate of conformity indicating compliance with all applicable emission standards."[165] Yet under averaging, a vehicle's "conform[ity] with the regulations prescribed under [Section 202]," cannot be determined until the manufacturer calculates its "net balance of emission credits" "following the end of the model year."[166]

Unable to issue certificates based on actual "conform[ity] with the regulations prescribed under [Section 202]," as the Clean Air Act requires, EPA instead awards certificates if the manufacturer attests that "to the best of [its] belief," it "will not have a negative balance of emission credits for any averaging set when all emission credits are calculated at the end of the year."[167] Such certificates are conditioned on a manufacturer's further demonstration of compliance based on its actual model year production, and paradoxically state that they will be "void *ab initio*" if, at the end of the year, the manufacturer fails to comply with the averaging,

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[161] *Id.* § 7525(b)(2)(A)(ii).

[162] *Id.* § 7522(a)(1).

[163] *Id.* § 7525(b)(2)(A)(ii).

[164] *Id.* § 7522(a)(1).

[165] 71 Fed. Reg. 2810, 2810 (Jan. 17, 2006).

[166] *See, e.g.*, 40 C.F.R. § 1037.730(a), (b)(4), (c)(1).

[167] *Id.* § 1037.725(b)(1).

banking and trading provisions. This "need to rewrite clear provisions of [Title II] should have alerted EPA that it had taken a wrong interpretive turn" in allowing averaging.[168]

Warranties and remediation. Averaging similarly clashes with Title II's warranty provisions, which EPA has previously recognized "assume individual vehicle compliance with the applicable standards."[169] Under Section 207, a manufacturer must "warrant to the ultimate purchaser and each subsequent purchaser" "*at the time of sale*" that each new vehicle complies with "applicable regulations under [Section 202]."[170] Yet, as with certificates of conformity, manufacturers cannot warrant compliance at the time of sale because compliance using averaging can be determined only at year-end.[171]

Averaging is also inconsistent with Title II's remediation and notification provisions. If EPA "determines that a substantial number of any class or category of vehicles or engines … do not conform to the regulations prescribed under [Section 202]," the manufacturer must remedy "the nonconformity of any such vehicles or engines."[172] If "a motor vehicle fails to conform," the manufacturer bears the cost.[173] "[D]ealers, ultimate purchasers, and subsequent purchasers" must be given notice of any nonconformity, which requires identification of specific nonconforming vehicles.[174] None of this is possible if the nonconformity depends on the end-of-year emissions from the entire averaging set. Instead, EPA has effectively rewritten the statute by instructing manufacturers to decide for themselves, at year-end, which vehicles in a nonconforming averaging set to "designate" as conforming and which to "designate" as nonconforming.[175]

Penalties. Finally, EPA's averaging regime is inconsistent with the statute's penalty provision. Under Section 205, any violation "shall constitute a separate offense with respect to each motor vehicle or motor vehicle engine," with each offense subject to its own civil penalty of up to nearly $60,000.[176] Under EPA's approach, however, no individual vehicle or engine violates the

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[168] *UARG*, 573 U.S. at 328.

[169] 45 Fed. Reg. at 14,502.

[170] 42 U.S.C. § 7541(a)(1) (emphasis added).

[171] *See* 40 C.F.R. §§ 1037.120(a), 1037.725, 1037.730.

[172] 42 U.S.C. § 7541(c)(1).

[173] *Id.* § 7541(h)(1).

[174] *Id.* § 7541(c)(2).

[175] *See, e.g.*, 40 C.F.R. § 1037.730(b)(7).

[176] 42 U.S.C. § 7524(a); 40 C.F.R. § 19.4.

applicable standard; only the averaging set as a whole does. But the statute provides no method for calculating penalties when an averaging set fails to meet its target standard—because the statute does not authorize averaging.

Other provisions. A specific heavy-duty-vehicle emission standard prescribed by Section 202 itself confirms that the statute does not permit averaging. For model year 1998 and thereafter, Congress specified that the regulations governing nitrogen-oxide emissions "from gasoline and diesel-fueled heavy duty trucks shall contain standards which provide that such emissions may not exceed 4.0 grams per brake horsepower hour."[177] This provision requires that the standards apply to "heavy duty trucks," not "heavy duty trucks *on an average basis across an 'averaging set'*." Construing this provision to allow averaging would, in effect, impermissibly add words to the statute.[178] And the extra words "on average" would have a significant substantive effect: "Roller coaster riders must be 48 inches tall" means something very different from "roller coaster riders must be 48 inches tall *on average*."

Other parts of Section 202 further demonstrate that emission standards cannot be met through averaging. Section 202(b)(3), for example, authorizes EPA to grant waivers from certain nitrogen-oxide emission standards—which, again, are standards "under" Section 202(a)—for no "more than 5 percent of [a] manufacturer's production or more than fifty thousand vehicles or engines, whichever is greater."[179] That is nonsensical under an averaging regime, which could effectively grant a "waiver" to 50% or more of a manufacturer's fleet if enough other vehicles outperform the standard.

Each time Congress directed EPA to issue specific emission standards, it mandated standards applicable to vehicles individually. Just as specific terms clarify the meaning of general ones, the specific emission standards Congress required clarify EPA's general Section 202(a) authority.

The broader text and history of Title II. Finally, other indicia of statutory meaning demonstrate that the rule exceeds EPA's statutory authority under Section 202(a). Elsewhere in Title II, Congress showed that it knew how to legislate with respect to "average annual aggregate emissions."[180] Thus, "if Congress wanted to adopt [an averaging] approach" for motor vehicle

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[177] 42 U.S.C. § 7521(a)(3)(B)(ii).

[178] *See Rotkiske v. Klemm*, 589 U.S. 8, 14 (2019).

[179] 42 U.S.C. § 7521(b)(3).

[180] *Id.* § 7545(k)(1)(B)(v)(II) (directing EPA to take certain actions if "the reduction of the average annual aggregate emissions of toxic air pollutants in a [designated district] fails to meet" certain standards).

standards under Section 202(a), "it knew exactly how to do so."[181] It did not choose that approach.

The Energy Policy and Conservation Act reinforces that conclusion. There, Congress directed the Secretary of Transportation to issue "average fuel economy standards for automobiles manufactured by a manufacturer" in a given model year—that is, fleetwide-average fuel economy.[182] That Congress has not used similar language in Section 202(a) of the Clean Air Act is a "telling clue" that the Act does not permit fleetwide averaging.[183]

The Clean Air Act's history also reflects Congress' understanding that emission standards would apply to vehicles individually. Before 1970, EPA relied on testing prototypes, rather than vehicles rolling off the assembly line. But in the 1970 amendments, Congress permitted EPA to test any individual vehicle coming off the assembly line.[184] The House Report explained that while some testing of prototypes "will continue," "tests should require each prototype rather than the average of prototypes to comply with regulations establishing emission standards."[185] If Congress forbade averaging across *prototypes*, it certainly did not permit averaging across entire *fleets*.

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For many of these reasons, this Court has previously cast substantial doubt on EPA's authority to set fleetwide-average emission standards, explaining in *Natural Resources Defense Council v. Thomas* that the "engine specific thrust" of Title II's "testing and compliance provisions" is evident both in Congress' choice to "spea[k] of 'any,' 'a,' or 'such' motor vehicle or engine" and in the "troubling" legislative history recounted above. [186] The arguments were not dispositive in *Thomas* only because the parties there failed to present them.[187]

The Supreme Court's recent decision in *Loper Bright* should eliminate any doubt. The best reading of Title II of the Clean Air Act requires individual vehicle compliance and does not authorize a fleet-wide credit trading system. Moreover, the standards are not feasible or appropriate without averaging. As a result, the current carbon-dioxide standards are unlawful and must be rescinded.

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[181] *SAS Inst., Inc. v. Iancu*, 584 U.S. 357, 365 (2018).

[182] 49 U.S.C. § 32902(a).

[183] *Epic Sys. Corp. v. Lewis*, 584 U.S. 497, 517 (2018).

[184] *See* Pub. L. No. 91-604, § 8, 84 Stat 1676, 1694–96.

[185] H.R. Rep. No. 91-1146, at 6 (1970).

[186] 805 F.2d 410, 425 n.24 (D.C. Cir. 1986).

[187] *Id.*

3.2. Electric Vehicles Do Not Belong in the Class of Motor Vehicles Contributing to Dangerous Air Pollution (C-11, C-24, C-25)

Even if the fleetwide ABT program were somehow permissible, the carbon-dioxide standard are independently unlawful because of a second foundational legal error: EPA regulates vehicles that, for the purposes of the rule, do not emit the air pollutants in question. According to EPA's regulations, battery-electric vehicles have zero tailpipe emissions of GHGs and other criteria pollutants. Although these vehicles transfer emissions to the power sector, they are not a "class of new motor vehicles" from which regulated air pollutants are emitted. This distinction is fatal to the current carbon-dioxide standards. Section 202(a) authorizes EPA to set "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."[188] The statute's plain text focuses on setting standards for vehicles that actually emit the harmful pollutant. A class of vehicles that "cause, or contribute to, air pollution" is most naturally defined to include only vehicles that cause that pollution. EPA simply cannot sweep non-emitting vehicles into the class.

It is only by ignoring this principle that the Biden EPA was able to reverse-engineer an EV mandate. EPA reverse-engineered its mandate by setting GHG targets so low they are impossible for conventional vehicles to meet, thereby forcing manufacturers to produce a high percentage of EVs whose fictional "zero" emissions can be averaged in to achieve compliance. This scheme is functionally identical to the "generation shifting" approach the Supreme Court held to be unlawful in *West Virginia v. EPA*. There, EPA used its authority over emissions from power plants not to make individual coal plants cleaner, but to force a nationwide shift in electricity production from coal to wind, solar, and gas.[189] Here, EPA is doing the exact same thing for vehicles, using its authority to force a nationwide shift from vehicles that run on gasoline or diesel to those that run on electricity. This decision to "substantially restructure" a foundational sector of the American economy is a matter of "vast economic and political significance," requiring "clear congressional authorization."[190] Just as in *West Virginia*, Congress has not provided the necessary clear authorization for such a radical and costly transformation in the general language of Section 202(a).

Finally, even if section 202(a) did permit the inclusion of EVs in the same class of vehicles as internal-combustion motor vehicles, the way in which current standards treats the emissions of

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[188] 42 U.S.C. § 7521(a).

[189] *West Virginia*, 597 U.S. at 712.

[190] *Id.* at 724, 716, 723 (cleaned up).

those vehicles is arbitrary and capricious. The rule's compliance scheme treats EVs as zero-emission vehicles while acknowledging that EVs generate significant upstream emissions from battery manufacturing and the electricity that powers them. The rule cannot have it both ways. If EVs are truly zero-emission vehicles, they do not belong in the regulated class under Section 202(a). If they are not zero-emission vehicles, then the entire compliance framework—which relies on averaging in those zeros to force electrification—is a sham. By myopically narrowing its compliance framework to tailpipe emissions, and then including vehicles with no tailpipes, the Biden EPA rules create an absurd and fundamentally irrational scheme. This provides a clear and independent basis for repealing the current carbon-dioxide standards or, at a minimum, for freezing them at model year 2026 or earlier levels until EPA can promulgate lawful, replacement standards that do not compel fuel switching.

3.3. The Heavy-Duty Vehicle Carbon-Dioxide Standards Are Premised Upon Unreliable and Arbitrary Modeling (C-12, C-20, C-21)

Emissions standards under Section 202(a) must be technologically and economically "feasible."[191] But the Biden EPA failed to carry out is burden of proof when it set the "Phase 3" standards for model year 2027 through 2032 and later heavy-duty vehicles, warranting a repeal of those standards.

3.3.1 EPA's payback schedule was arbitrary

To determine that its Phase 3 standards were feasible, EPA relied on projections about how quickly heavy-duty EVs will be adopted by the market. And to develop those projected adoption rates, EPA relied on a "payback" metric, asking how many years of operational savings it would take for a purchaser to recoup an upfront investment in a more expensive EV.[192]

EPA's payback analysis, however, suffered from numerous flaws. To begin, EPA's exclusive focus on payback ignores numerous relevant factors that influence technology adoption, like vehicle performance, refueling convenience, and resale value. As a result, even EPA's otherwise-sympathetic peer reviewers criticized the agency's payback-only approach.[193]

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[191] *Motor & Equip. Mfrs. Ass'n, Inc. v. EPA*, 627 F.2d 1095, 1118 (D.C. Cir. 1979); *see* 42 U.S.C. § 7521(a)(2) (standards may take effect only after the time necessary "to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance").

[192] 89 Fed. Reg. at 29,558, 29,563–64.

[193] *See* HD TRUCS Peer Review, EPA-HQ-OAR-2022-0985-3856, Bradley 3 (the "payback period to adoption calculation is pretty naïve"); Al-Alawi 7 (adoption model must "include other parameters that

(footnote continued on next page)

EPA arbitrarily ignored these criticisms and relied on a payback-only model anyway. Its proposed rule used a payback equation developed by ACT Research.[194] But after ACT Research explained that EPA "misapplied the equation by leaving out various factors, including a consideration of total cost of ownership," EPA embraced a different payback approach based on data from the Transportation Energy and Mobility Pathway Options (TEMPO) model built by the National Renewable Energy Laboratory.[195] That switch, however, did not solve EPA's problems.

First, TEMPO calculates technology adoption based on a vehicle's "total cost of driving," which includes purchase, fuel, and maintenance costs, but ignores resale value and other commercially relevant factors, such as payload and towing capacity.[196] So like EPA's original model, TEMPO leaves out multiple critical factors.

Second, because TEMPO does not calculate "payback," EPA matched TEMPO's cost inputs and sales outputs to estimate a correlation between payback and adoption. EPA then treated this *correlation* as *causation*, as if the payback period itself motivated fleet purchasing decisions.[197] That is inconsistent with TEMPO's determination that "total cost of driving," not "payback," drives adoption. And although EPA attempted to defend its reliance on TEMPO and payback, the vast range of adoption rates EPA calculated from TEMPO's data shows that payback does not reliably predict adoption.[198]

Third, TEMPO recognizes that vehicle adoption decisions occur over a limited time-horizon that varies by vehicle category.[199] The study EPA used assumed a time-horizon ranging from three to five years, depending on the vehicle.[200] EPA, however, used the data to estimate payback costs—and therefore the purported feasibility of adopting EVs—for *ten years* out, well beyond TEMPO's

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simulate the purchasers' decision-making process"); de Ojeda 5 (EPA's "prescribed schedules of adoption rate are … a 'guess[ing]' game").

[194] 89 Fed. Reg. at 29,564.

[195] *Id.* at 29,564 & n.753; Phase 3 Rule Regulatory Impact Analysis 335–43, EPA-HQ-OAR-2025-0194-0003 (Phase 3 Rule RIA); Catherine Ledna et al., *Decarbonizing Medium- & Heavy-Duty On-Road Vehicles: Zero-Emission Vehicles Cost Analysis* 10 (March 2022), EPA-HQ-OAR-2022-0985-0771 (NREL Study).

[196] NREL Study at 12, 42.

[197] Phase 3 Rule RIA at 337–40.

[198] Phase 3 Rule RIA at 340; *see, e.g.*, *id.* at 337 ("[W]hile the payback may be the same, adoption rates may vary.… A 4-year payback, for example, may yield 7–40% adoption rates[.]").

[199] NREL Study at 10, 14.

[200] *Id.* at 51.

horizon, and arbitrarily ignored real-world variation in purchase considerations across vehicle classes (which TEMPO incorporates).[201]

Unsurprisingly, EPA's final payback-adoption model predicts unrealistic adoption rates, which turn to unrealistic predictions about the feasibility of EPA's standards. Indeed, EPA's model implies that a 100% EV mandate is *immediately* feasible for many categories of heavy-duty vehicles, a projection that even EPA admitted has no basis "in the real-world."[202]

Instead of discarding a model that generates unrealistic predictions—as a reasonable agency would—EPA arbitrarily tinkered with the results. It constrained the predicted technology-adoption rates by applying "caps," limiting the share of EVs to 20% in early model years and 70% in later model years, and setting 2030 adoption rates to 33% of the increase between the 2027 and 2032 rates.[203] EPA provided no meaningful explanation for these "caps," citing only its unexplained "technical judgment."[204]

Applying these arbitrary constraints, EPA invented a 10-year "payback schedule" of technology-adoption rates for EVs based on the number of years to achieve payback:

Table II-28 Payback Schedule in HD TRUCS

Payback (year)	MY 2027 for BEVs	MY 2030 for BEVS and FCEVs	MY 2032 for BEVS and FCEVs
<0	20%	37%	70%
0-1	20%	37%	70%
1-2	20%	37%	70%
2-4	20%	26%	39%
4-7	14%	14%	14%
7-10	5%	5%	5%
>10	0%	0%	0%

Of the 21 entries in the payback schedule, only five come directly from EPA's payback-adoption model. The rest merely reflect the arbitrary caps that EPA imposed on its admittedly unrealistic modeling—making EPA's resulting feasibility determination equally arbitrary.

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[201] *See* 89 Fed. Reg. at 29,566; NREL Study at 51.

[202] 89 Fed. Reg. at 29,565.

[203] 89 Fed. Reg. at 29,565; Phase 3 Rule RIA at 344–45.

[204] 89 Fed. Reg. at 29,565.

EPA also never adequately explains how to reconcile its payback schedule with its cost-benefit analysis. EPA's cost-benefit analysis claims that the rule's mandates counteract an "energy efficiency gap"—caused by an unexplained market failure—in which market participants do not "adopt technologies that are expected to reduce operating costs," even though those technologies would "repay buyers' initial investments rapidly."[205] EPA's payback schedule, by contrast, assumes that market participants consider operating costs when adopting new technologies out to ten years in the future. Those "internally inconsistent" assumptions are a hallmark of arbitrary decisionmaking.[206]

3.3.2 EPA's payback modeling is arbitrary

EPA's determination that EVs would have short payback periods, and so that the standards would be feasible, was also unreasonable. In reaching that result, EPA relied on another round of unjustifiable assumptions, including with respect to tax-credit availability, fleet purchasing behavior, infrastructure deployment, and technology readiness.

To determine vehicle payback, EPA used an Excel spreadsheet it calls the "HD TRUCS" model. That spreadsheet relies on multiple unreasonable premises. For instance, EPA significantly accelerated payback for all vehicles by assuming full availability of Inflation Reduction Act tax credits by 2030.[207] But that would require manufacturing all the required batteries and modules in the United States by 2030, a prediction that does not match any marketplace reality. That assumption is now entirely unjustified now that the One Big Beautiful Bill Act has repealed the tax credits. Updated model inputs show that the Phase 3 carbon-dioxide standards are not feasible even accepting EPA's flawed modeling. *See infra* 4 (urging a regulatory freeze on this basis).

EPA's payback modeling for sleeper-cab tractors further exemplifies the agency's arbitrary approach. Those tractors "generally haul trailers longer distances between cities and states with trips well over 1,000 miles in length," and weigh 80,000 pounds fully loaded.[208] New sleeper-

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[205] Phase 3 Rule RIA at 730–31.

[206] *ANR Storage Co. v. FERC*, 904 F.3d 1020, 1024 (D.C. Cir. 2018).

[207] *See* 89 Fed. Reg. at 29,551–53.

[208] Phase 3 Rule RIA at 8, 70, 388; 23 U.S.C. § 127(d)(4).

cabs also run over 100,000 miles each year, and so require powerful engines that use energy-dense fuels to maximize cargo and minimize downtime.[209]

EVs do not fit that description. Their batteries have low energy-densities, which creates a tradeoff between vehicle range on the one hand, and payload capacity and cost on the other. More range requires bigger batteries, but bigger batteries are heavy and expensive, so they lower payload and increase upfront cost.[210]

Yet EPA unreasonably predicted that electric sleeper-cabs could go from practically 0% of the market today to 25% by model year 2032.[211] To get there, EPA modeled four sleeper-cabs in HD TRUCS (Vehicles 32, 54, 78, 79). Vehicles 32, 54, and 78 are battery-electric sleeper-cabs accounting for 48% of the projected "zero-emission" vehicle sales in that category, while Vehicle 79, a fuel-cell-electric sleeper-cab, accounts for the remaining 52% of sales.[212] Neither projection is reasonable.

Start with the battery-electric trucks. EPA recognized that fleets will not buy battery-electric sleeper-cabs that haul far less than comparable diesel trucks, and so assigns Vehicle 54—which has a payload loss of 22%—a "sales allocation of 0 percent."[213] But EPA arbitrarily assigns Vehicle 32, a nearly identical sleeper-cab, a "20 percent" share, despite its similar payload challenges.[214]And to limit payload loss for the other modeled battery-electric sleeper-cab (Vehicle 78), EPA reduced the battery size, limiting the truck's range to 300 miles—less than the 420-mile daily average travel for sleeper-cabs, meaning that the truck must refuel on the road and face increased transit times.[215]

For refueling, EPA imagined a network of public charging stations that are "assumed to have seventeen 1 MW … ports and twenty 150 kW … ports for a total peak power capacity of 20 MW."[216] That "assumed" infrastructure does not exist. Only *one* (experimental) station with 1-

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[209] *Id.* at 19–20, 824.

[210] Hoyu Chong & Edward Rightor, *Closing the Trucking Gaps* 10–11 (June 2023), https://perma.cc/773E-VVDR.

[211] Phase 3 Rule RIA at 408.

[212] *Id.* at 217–18.

[213] *Id.* at 218, 389.

[214] *Id.* at 217, 388 (payload loss of 16.9%).

[215] *Id.* at 192, 195.

[216] *Id.* at 296, 328.

MW ports appears to be operational in the United States, and there are *no* 20-MW charging stations. [217] That is far from even the limited "freight corridor" network that EPA optimistically suggests would be adequate.[218]

Nor will the necessary public charging infrastructure exist in the timeframe EPA imagined. 20-MW stations are not easy to build and permit, and adding one is equivalent to adding a whole town to the electric grid.[219] EPA is also overly optimistic about the grid upgrades needed; it assumes that transformers can be installed in three to eight months,[220] but transformers take two to four *years* to be delivered and installed.[221]

EPA's assumptions about fuel-cell-electric vehicles were equally unreasonable. Vehicle 79, the fuel-cell-electric sleeper cab, is nowhere near being commercially viable on the scale EPA assumes.[222] Hydrogen for fuel-cell-electric vehicles "must be compressed or liquified for use," but liquid-hydrogen storage is presently infeasible for transportation purposes.[223] EPA claims that hydrogen could instead be compressed at enormous pressure in six expensive heavy storage tanks mounted on the back of the cab, but even that would provide barely enough range to meet the *average* daily travel distance for sleeper-cabs today.[224]

That means a robust public hydrogen fueling infrastructure is required. That infrastructure, however, faces further production, distribution, and refueling supply chain challenges. Distributors would have to transport hydrogen in specially designed tank trucks and build a network of public refueling facilities from scratch in less than eight years.[225] Fuel-cell-electric

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[217] *See* Jameson Dow, *WattEV Opens US' First Megawatt Charge Station with 1.2MW Speeds and Solar*, electrek (May 6, 2024), https://tinyurl.com/4ubsued5.

[218] 89 Fed. Reg. at 29,512–16.

[219] Chong & Rightor, *supra*, at 15.

[220] Phase 3 Rule RIA at 128.

[221] *See* Nat'l Infrastructure Advisory Council, *Addressing the Critical Shortage of Power Transformers* 3–4 (June 2024), https://tinyurl.com/sdsz2hn9.

[222] Phase 3 Rule RIA at 141 (admitting that "there were no" heavy-duty fuel-cell-electric vehicles "certified through [model year] 2021").

[223] *Id.* at 136–37.

[224] 89 Fed. Reg. at 29,527; Phase 3 Rule RIA at 192.

[225] *see* U.S. Dep't of Energy, *Alternative Fueling Station Locator*, https://tinyurl.com/4d585d4v (last visited Oct. 14, 2024) (zero hydrogen refueling stations for class 6 through 8 vehicles).

trucks also pose potential safety risks, which EPA does not meaningfully address.[226] Hydrogen leaks easily and is extremely flammable, with flames that are "almost invisible."[227] And because fuel-cell-electric heavy-duty vehicles are not in commercial use, they have no safety record; for example, EPA cannot even say whether fuel-cell-electric trucks could safely use tunnels.[228]

Finally, EPA claimed its standards could theoretically be met without any EVs by relying on hydrogen-fueled internal-combustion-engine vehicles.[229] But no such vehicles are commercially available—and EPA admits that hydrogen internal-combustion-engine truck tractors would have a negative payback, meaning they logically should not be adopted *at all*, let alone at the rates EPA needs to make its standards feasible.[230] That makes EPA's alternative reliance on hydrogen-fueled internal-combustion-engine vehicles just as arbitrary as its reliance on electrification. EPA should repeal the unfeasible model year 2027 through 2032 GHG standards.

4. As a Severable Alternative, EPA Should Freeze the Standards at Model Year 2026 and Later (C-11, C-12, C-13, C-16, C-21)

As explained above, EPA is well within its legal authority to repeal the Endangerment Finding and to cease the regulation of carbon-dioxide emissions from new motor vehicles altogether. However, there is a legal risk that the D.C. Circuit or the Supreme Court could see things differently. Should a court vacate the repeal of the Endangerment Finding, the agency must have a severable and legally sound alternative set of GHG regulations in place for manufacturers to fall back on.

The best reading of Section 202(a) provides EPA with the "extraordinarily broad" discretion necessary to adopt standards that are both achievable and with improvements to ICE vehicles and consistent with the requirements of the Clean Air Act.[231] Such an alternative would fulfill EPA's regulatory duty without resorting to an illegal EV mandate, and would give motor vehicle manufacturers more certainty and predictability than approach that could result in a reinstatement of the Biden standards.

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[226] *See* 89 Fed. Reg. at 29,528.

[227] Phase 3 Rule RIA at 138–39.

[228] *Id.* at 140.at 140.

[229] *See* 89 Fed. Reg. at 29,452–53.

[230] *Id.* at 29,575.

[231] *See California v. EPA*, 72 F.4th 308, 314 (D.C. Cir. 2023).

The D.C. Circuit's recent decision in *California v. EPA*, interpreting the nearly identical language of Section 231 of the Clean Air Act, confirms the breadth of the agency's discretion. Section 231, which governs aircraft emissions, directs the Administrator to "issue proposed emission standards" after making an endangerment finding.[232] Like Section 202(a), it requires a judgment of endangerment but provides no further textual command regarding the specific factors the agency must consider of the stringency of the standards that must be set. Analyzing this language, the court held that the statute "does not specify the substantive content of the standards, nor does it specify any factors the agency must consider."[233]

The court rejected the argument that the statute's reference to "technological feasibility" and providing lead time for the "development and application" of new technology required EPA to adopt a "technology-forcing approach."[234] It noted that where Congress intends to mandate a technology-forcing standard, it does so explicitly by using phrases like "maximum degree of reduction" or "greatest degree of emissions reduction achievable."[235] By contrast, Section 231—and by extension, Section 202(a)—requires only that EPA "shall issue" standards, leaving the content and stringency of those standards to the agency's reasonable discretion. EPA's decision to align its aircraft standards with existing international standards, rather than force the development of new technology, was therefore a permissible exercise of its broad discretion.[236]

EPA should use this broad discretion here to finalize, as a severable alternative, standards that are achievable by existing fleets without EVs. EPA's alternative could simply freeze the carbon-dioxide standards at model year 2026 in the alternative, based on the high cost and dubious feasibility of the model year 2027 through 2032 and later standards.

The Biden EPA carbon-dioxide standards will have enormous costs and uncertain benefits justifying less stringent regulations on policy grounds. The Biden EPA projected that the standards for light- and medium-duty vehicles would impose $870 billion in compliance costs on manufacturers by 2055 by forcing manufacturers to invest in research, development, and capital expenditures for EVs, but this is a likely underestimate given the repeal of tax credits and state-level mandates.[237]

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[232] 42 U.S.C. § 7571(a)(2)(A).

[233] *California*, 72 F.4th at 314–15.

[234] *Id.*

[235] *Id.*

[236] *Id.* at 314.

[237] 89 Fed. Reg. at 28,105, 28,108.

The modeling is also deeply flawed. Although the Biden EPA claimed the light- and medium-duty standards will only increase compliance costs by $2,074 per vehicle,[238] those claims are grossly unrealistic. EPA's "OMEGA" modeling systematically underestimates the indirect compliance costs of transitioning to EVs by simply applying a far too low 1.5 retail markup to technology costs based on historical indirect cost data for internal-combustion vehicles.[239] EPA also ignores the consumer welfare tradeoffs involved in this transition, such as declines in the performance of internal-combustion vehicles and lower utility from EVs (e.g., loss of payload and towing capacity).

Real-world data shows that the Biden EPA's cost analysis was incorrect. For example, in the second quarter of 2024, Ford spent an average of about $61,500 per electric vehicle it sold, compared to only about $36,100 per conventional vehicle, and Ford's electric vehicle division lost $1.3 billion, showing that traditional manufacturers have to considerably cross-subsidize EVs.[240] Limited consumer uptake for EVs also shows that EVs are not the close substitutes that EPA assumed would lead to a significant acceleration of EV market share growth in calendar year 2025 and later years.[241] EPA's new analysis in the draft regulatory impact analysis based on the estimated costs of compliance credits suggests a "cost of at least $18,000 per vehicle" for the Biden EPA light-duty vehicle standards alone, suggesting EPA's prior calculation using the OMEGA model could be off by nearly an order of magnitude.[242]

These higher prices will, in turn, have a predictable and detrimental effect on consumers: They will delay fleet turnover. When new motor vehicles become more expensive, drivers choose to keep older, less safe, and higher-emitting vehicles on the road for longer: the "Gruenspecht" effect.[243] This directly harms public health and welfare in two critical ways. First, it slows the adoption of modern safety features in newer automobiles, resulting in more traffic-related injuries and fatalities. Second, it increases the public's exposure to the very criteria pollutants—like

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[238] *Id.* at 27,861, 27,987, 28,057.

[239] Multi-Pollutant Rule Regulatory Impact Analysis, at 2-70, 2-71 (2024), EPA-HQ-OAR-2025-0194-0002. EPA acknowledges this indiscriminate markup "is likely to … underestimate" the costs of motor vehicles with higher indirect costs, such as EVs. *Id.*

[240] *See* Ford Motor Co., Form 10-Q, 2025 Q2, https://d18rn0p25nwr6d.cloudfront.net/CIK-0000037996/4aec9ac2-8dcd-4103-a985-bebb44627470.pdf.

[241] *See* DRIA at 34–35.

[242] *Id.* at 52.

[243] *Id.* at 41.

nitrogen oxides and particulate matter—that are the primary cause of traditional, localized air pollution and are directly linked to respiratory illnesses.

Moreover, the IRA tax credits that supported EPA's regulatory baseline and regulatory feasibility analysis have been repealed by Congress, as have the state-level EV mandates that EPA assumed would compel increased production of EVs in its baseline scenario. As EPA concludes in the Draft Regulatory Impact Analysis:

> [I]n the absence of IRA credits, the LD industry is not compliant in model year 2032 where the BEV adoption rate is not sufficient to keep pace with the year-over-year increases in stringency of the GHG standards set in the LMDV rule. As a result, the MY 2032 GHG industry-wide compliance value is approximately 11 percent higher than the GHG target for that year.[244]

Similarly, for heavy-duty vehicles, using the Biden EPA's model, "[i]n the analysis that removes the IRA tax credits and California's ACT rule [the EV mandate for heavy-duty vehicles], the longer payback periods of ZEV technologies lead the model to project that the HD industry would not be in compliance with the existing MY 2027 through MY 2032 and later standards."[245]

Now that the IRA tax credits have been repealed, the heavy-duty industry has no hope of compliance. Even according to EPA's HD TRUCS model, which is unreliable for the reasons discussed *supra*, without vehicle purchase, battery, and electric vehicle supply equipment credits, ZEV adoption rates plummet, as shown below for model year 2032.[246]

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[244] *Id.* at 28.

[245] *Id.* at 29.

[246] ZEV adoption rates were calculated using the HD TRUCS tool, EPA-HQ-OAR-2022-0985-3877_attachment_1 (sheet "4_Adoption Rates," cells Y:7 through Y:11) and applying EPA's downward adjustment for model year 2032, as indicated in HD TRUCS Output Calculator, EPA-HQ-OAR-2022-0985-3877_attachment_2 (sheet "Adoption Rates," cells U:2 through U:6). For the EPA Prediction scenario, the HD TRUCS tool provided on Regulations.gov was used without modification, and the calculated ZEV adoption rates match those presented by EPA in its final rule. 89 Fed. Reg. at 29,452, Table ES-3. For the No Credits scenario, IRA vehicle purchase credits, battery credits, and electric vehicle supply equipment credits were eliminated as indicated in "Mods from EPA Final Rule" sheet of the attached spreadsheet, and the same downward adjustment was applied to facilitate comparison.

MY2032 ZEV Adoption Rates			
	EPA Prediction	**No Credits**	**% Change**
LHD Vocational	60%	47%	-21%
MHD Vocational	40%	25%	-38%
HHD Vocational	30%	16%	-48%
MHD All Cab and HHD Day Cab Tractor	40%	21%	-46%
Sleeper Cab Tractors	25%	5%	-80%

At a minimum, based on these conclusions, comments, and the record as a whole, EPA should promulgate severable alternative carbon-dioxide standards that freeze at model year 2026 levels and that would apply while courts review EPA's final rule. Should EPA's final reconsideration of the Endangerment Finding be vacated, EPA could then consider how the standards should be adjusted considering the changing policy environment and the lack of consumer uptake and acceptance without the interim uncertainty and extraordinary cost caused by a sudden judicial reinstatement of the Biden-EPA rules.

Of course, EPA has not proposed to freeze the standards at model year 2026. The Prime Mover Institute believes regulatory freeze repealing future greenhouse gas standards would be a logical outgrowth of a proposal to repeal all standards. But in any event, to foreclose any argument to the contrary, it would be prudent for EPA could have a supplemental comment period on this alternative while it concludes its reconsideration of the Endangerment Finding.

5. The Final Rule Does Not Affect Preemption of State Overreach (C-10)

The final rule must unequivocally affirm that federal law preempts any state or local attempts to regulate GHG emissions beyond their own borders, including for new motor vehicles. Congress established a comprehensive and exclusive federal regime for this purpose, and an agency's decision not to regulate—based on a determination that statutory predicates are not met—does not create a regulatory vacuum that states are free to fill. Clarifying this will provide regulatory certainty and foreclose the possibility of a patchwork of conflicting state mandates as has been the case in the past.

The regulation of pollution that crosses state lines is an inherently federal matter and governed by federal common law or a federal statute. As the Second Circuit explained *City of New York v. Chevron Corp.*, "[f]or over a century, a mostly unbroken string of cases has applied federal law to

disputes involving interstate air or water pollution."[247] Greenhouse gases, more than any other pollutant, are inherently interstate because once emitted, they "become well mixed in the atmosphere," making their source untraceable and their impact global.[248] As the court noted, "emissions in New Jersey may contribute no more to flooding in New York than emissions in China."[249] Allowing state or local regulation of these emissions would permit a single State or city to "effectively regulate … behavior far beyond [its] borders," and would "risk upsetting the careful balance that has been struck between the prevention of global warming … and energy production, economic growth, foreign policy, and national security."[250]

This federal common law no longer governs because Congress displaced it when it passed the Clean Air Act.[251] The Clean Air Act is now the exclusive mechanism for addressing domestic GHG emissions.[252] The Supreme Court has held that when Congress enacts a comprehensive statute that "speaks directly to the question" a common-law rule was designed to answer, the court-made rule is displaced.[253] In this area, the Act anoints EPA as the "primary regulator of [domestic] greenhouse gas emissions."[254]

But this displacement did not create a gap for states to fill. The very reason federal common law applied in the first place is that the issue was of such a national scope that state law was inadequate to address it. "[W]here 'federal common law exists, it is because state law cannot be used.'"[255] As a result, when Congress replaces federal common law with a comprehensive federal statute like the Clean Air Act, it is merely substituting one federal solution for another. This action does not suddenly make state law competent to address issues that are inherently national. The authority remains exclusively federal and states may only act to the extent "authorized by federal statute."[256]

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[247] 993 F.3d 81, 91 (2d Cir. 2021).

[248] *Id.* at 92 (quoting *Am. Elec. Power Co. v. Connecticut* (*AEP*), 564 U.S. 410, 422 (2011)).

[249] *Id.*

[250] *Id.* at 93.

[251] *Id.* at 95.

[252] *AEP*, 564 U.S. at 429.

[253] *Id.* at 424.

[254] *Id.* at 428.

[255] *City of New York*, 993 F.3d at 98 (quoting *City of Milwaukee v. Illinois*, 451 U.S. 304, 313 n.7 (1981)).

[256] *Id.* at 99 (cleaned up).

For new motor vehicles, federal law preempts all regulation related to emissions. Section 209(a) of the Act preempts "any standard relating to the control of emissions from new motor vehicles."[257] This broad prohibition is tied to whether new vehicles are subject to federal oversight—not whether EPA has regulations cover for a particular pollutant. When read together with Section 202(a)'s focus on traditional pollutants, Congress has decided that GHG emissions from new vehicles do not need to be regulated. EPA should reaffirm this interpretation, and should codify its reading as a federal regulation that is severable from the rest of the statute.

Last, although EPA's primary alternative concludes that Section 202(a) in context doesn't authorize the regulation of GHGs, this doesn't call into question the displacement of federal common law or the preemption of state law as to out-of-state-emissions resulting from out-of-state sales. As to federal common law, EPA's primary alternative is limited to Section 202(a) and doesn't require overruling *Massachusetts*'s holding that GHGs are generally air pollutants covered by the Clean Air Act. Therefore, EPA's primary alternative doesn't alter *AEP*'s holding that federal common law is displaced by the Clean Air Act any more than *UARG* does. As to preemption of state attempts to control interstate emissions from out-of-state sources, the background rule against which Congress enacted the Clean Air Act is that disputes that "deal with air and water in their ambient or interstate aspects" were governed by federal common law and hence outside the legal control of the states.[258] The federalism canon "requires Congress to enact exceedingly clear language if it wishes to significantly alter the balance between federal and state power."[259] Therefore, if an issue was beyond the authority of a state before a statute like the Clean Air Act, it remains out of reach after the Act unless Congress clearly says otherwise. The Clean Air Act, however, did not speak clearly enough to delegate power in this "extraordinary" way to the states.[260] States, therefore, still lack authority to control out-of-state emissions from out-of-state sales.

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[257] 42 U.S.C. § 7543(a).

[258] *Illinois v. City of Milwaukee* (*Milwaukee I*), 406 U.S. 91, 99–100, 103 (1972) (cleaned up).

[259] *Sackett v. EPA*, 598 U.S. 651, 679 (2023).

[260] *Int'l Paper Co. v. Ouellette*, 479 U.S. 481, 397 (1987); *see also Cooley v. Bd. of Wardens of Port of Phila.*, 53 U.S. 299, 319 (1851) ("Whatever subjects of this power are in their nature national, or admit only of one uniform system, or plan of regulation, may justly be said to be of such a nature as to require exclusive legislation by Congress.").

CONCLUSION

The Prime Mover Institute supports repeal of EPA's counterproductive greenhouse gas regulations from motor vehicles, and urges EPA to repeal the standards by relying upon multiple independent bases to reduce legal risk. The Prime Mover Institute also urges EPA to promulgate backup standards in the alternative by freezing current standards at model year 2026.